



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

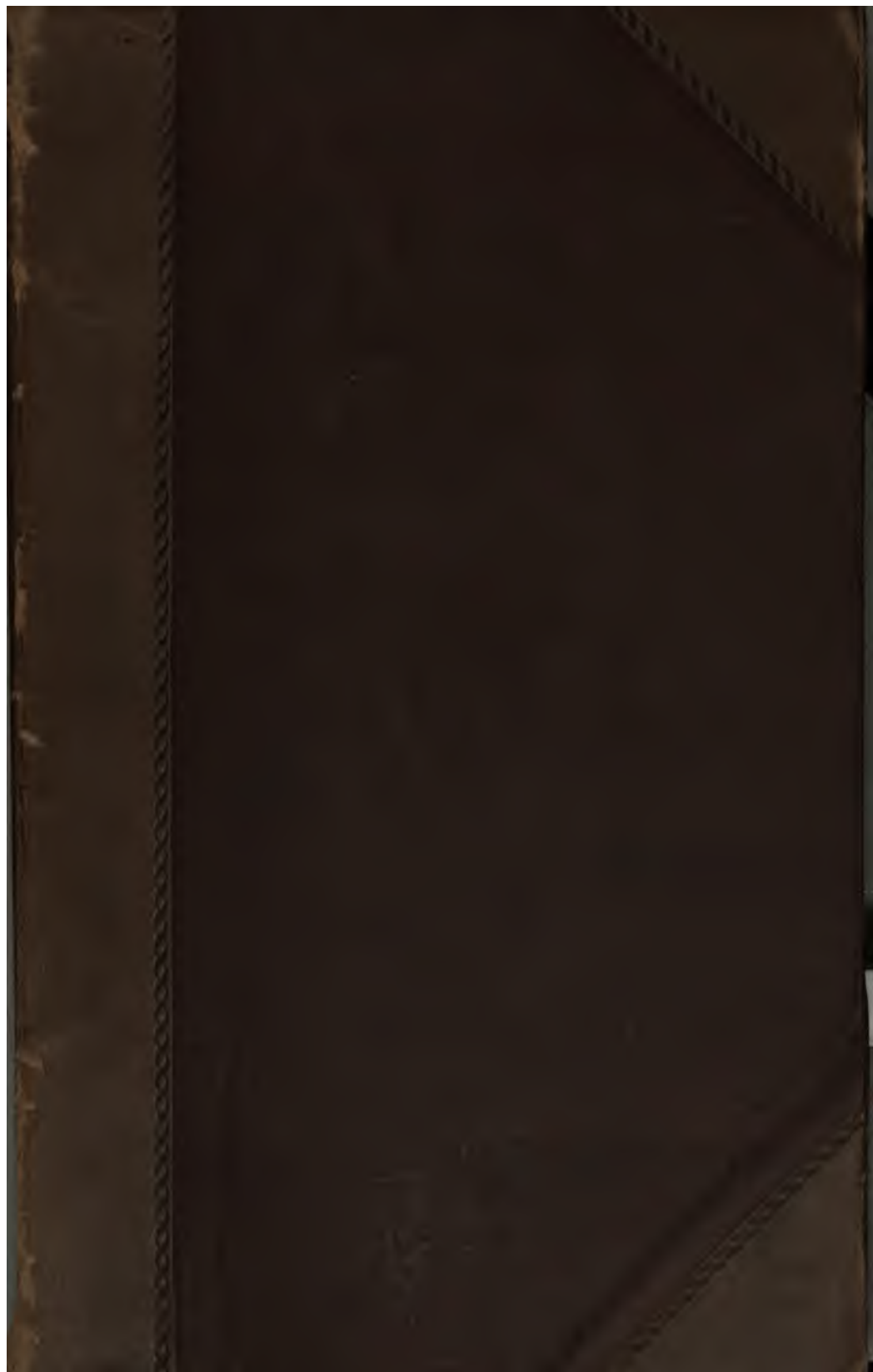
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>





600037996/

7.5.6.3.

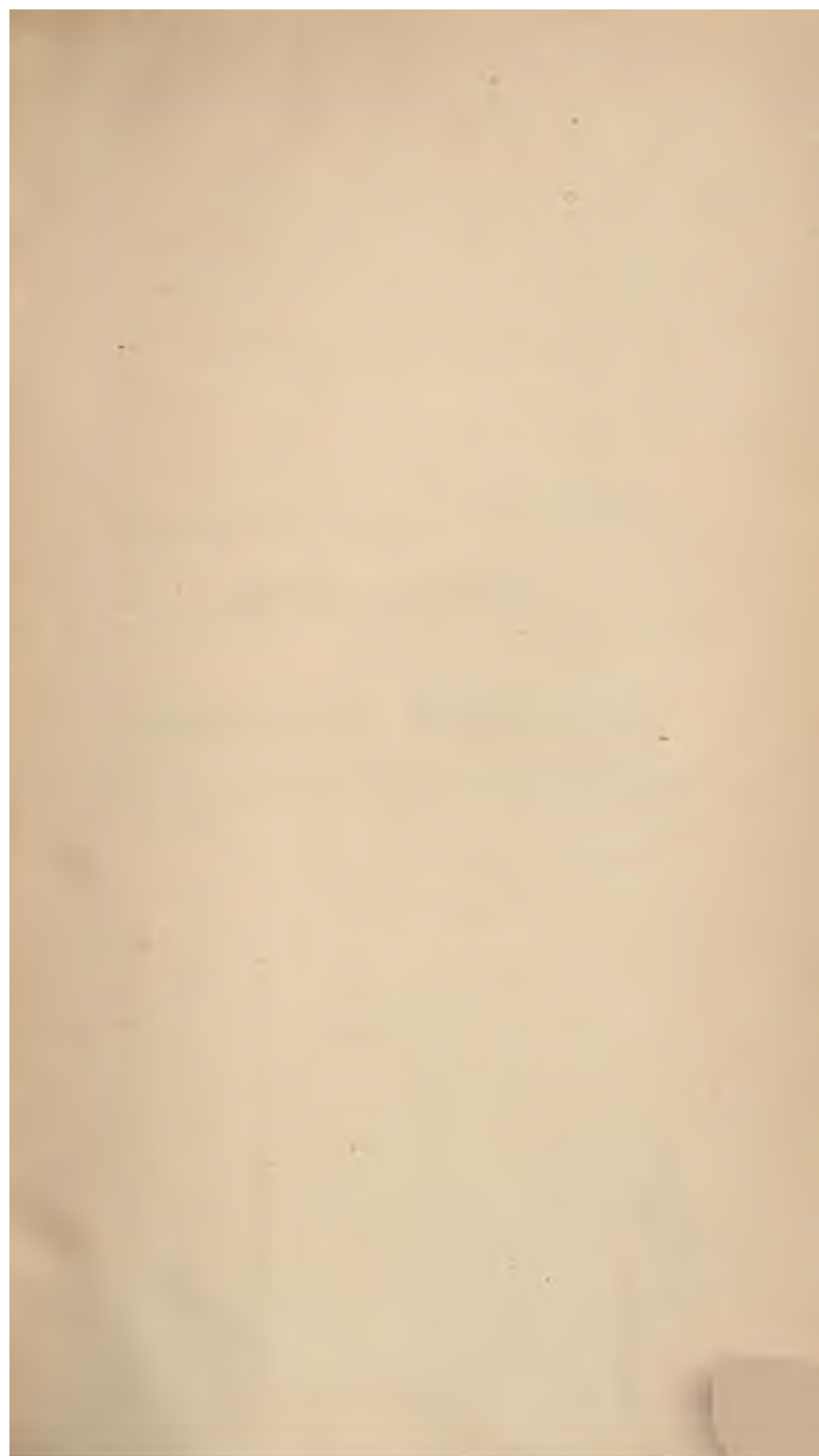


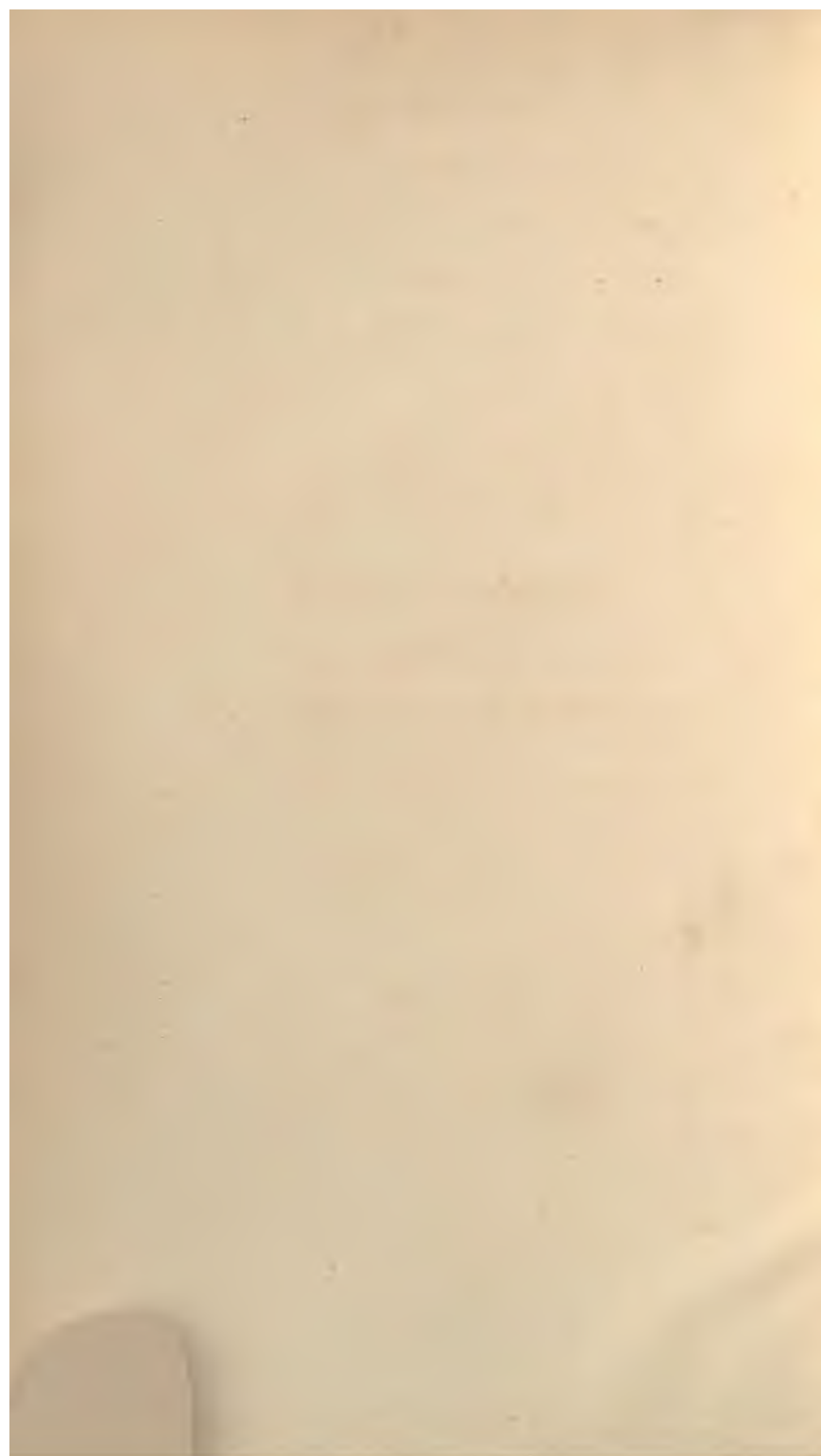
E. BIBL. RADCL.

19192 e. 321









AGRICULTURE.
OF THE
COUNTY OF HEREFORD.

THE
JOURNAL OF THE
ROYAL ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND
VOLUME 34
PART 1
1904

GENERAL VIEW
OF THE
AGRICULTURE
OF THE
COUNTY OF HEREFORD;

DRAWN UP FOR THE CONSIDERATION OF
THE BOARD OF AGRICULTURE
AND INTERNAL IMPROVEMENT,

BY
JOHN DUNCUMB, A. M.
SECRETARY TO THE AGRICULTURAL SOCIETY OF THAT
PROVINCE.

"Why should not Agriculture enjoy the same advantages as almost all great manufactories, in which every useful discovery and improvement either to perfect the manufacture or to fabricate it in less time, with less expence, is readily admitted." M. DE CHATEAUVIEUX.

"Ornium rerum, ex quibus aliquid conquiritur. nihil est Agricultura melius, nihil uberius, nihil dulcius, nihil homine, nihil libero, dignius."
CICERO DE OFF. LIB. I.

LONDON:

PRINTED BY W. BULMER AND CO. CLEVELAND-RROW,
ST. JAMES'S;
FOR G. AND W. NICOL, PALL-MALL, BOOKSELLERS TO
HIS MAJESTY, AND THE BOARD OF AGRICULTURE;
AND SOLD BY WILKIE AND ROBINSON, PATERNOSTER-
ROW; J. ASPERNE, CORNHILL; CADELL AND DAVIES,
STRAND; J. ALLEN, HEREFORD; W. CREECH, EDIN-
BURGH; AND J. ARCHER, DUBLIN.

1805.

ADVERTISEMENT.

THE great desire that has been very generally expressed, for having the AGRICULTURAL SURVEYS of the KINGDOM reprinted, with the additional Communications which have been received since the ORIGINAL REPORTS were circulated, has induced the BOARD OF AGRICULTURE to come to a resolution of reprinting such as may appear on the whole fit for publication. It is proper at the same time to add, that the Board does not consider itself responsible for any fact or observation contained in the Reports thus reprinted, as it is impossible to consider them yet in a perfect state; and that it will thankfully acknowledge any additional information which may still be communicated: an invitation, of which, it is hoped, many will avail themselves, as there is no circumstance from which any one can derive more real satisfaction, than that of contributing, by every possible means, to promote the improvement of his Country.

N. B. *Letters to the Board, may be addressed to Lord SHEFFIELD, the President, No. 32, Sackville-Street, Piccadilly, London.*

CONTENTS.

CHAPTER I.—GEOGRAPHICAL STATE AND CIRCUMSTANCES, - page 1

SECTION 1. 2.—Situation, Extent, and Divisions,	ib.
3.—Climate - - - -	8
4.—Soil and Surface - - -	9
5.—Minerals - - - -	10
6.—Water - - - -	11

CHAPTER II.—STATE OF PROPERTY, 22

SECTION 1.—Estates and their Management	ib.
2.—Tenures - - - -	23

CHAPTER III.—BUILDINGS, - - 27

SECTION 1.—Houses of Proprietors - -	ib.
2.—Farm-houses, Offices, Repairs	29
3.—Cottages - - - -	30

CHAPTER IV.—MODE OF OCCUPATION,

SECTION 1.—Size of Farms and Character of	32
Farmers - - - -	ib.
2.—Rents - - - -	36
3.—Tithes - - - -	ib.
4.—Poor Rates - - - -	40
5.—Leases - - - -	41
6.—Expense and Profit - -	42

CHAPTER V.—IMPLEMENTS,	-	page 45
CHAPTER VI.—ENCLOSING.—FENCING.— GATES,	- - -	49
CHAPTER VII.—ARABLE LAND,	- -	51
SECTION 1.—Tillage	- -	ib.
2.—Fallowing	- -	53
3.—Rotation of Crops	- -	57
4.—Crops not commonly cultivated	- -	66
CHAPTER VIII.—GRASS,	- - -	69
SECTION 1.—Natural Meadows and Pastures	- -	ib.
2.—Artificial Grasses	- -	70
3.—Hay Harvest	- -	72
4.—Feeding	- -	73
CHAPTER IX.—GARDENS AND ORCHARDS,	- - -	75
CHAPTER X.—WOODS AND PLANTATIONS,	- - -	94
CHAPTER XI.—WASTE AND UNIMPROVED LANDS,	- -	97
CHAPTER XII.—IMPROVEMENTS,	-	98
SECTION 1.—Draining	- -	ib.
2.—Paring and Burning	- -	100
3.—Manuring	- -	103
4.—Weeding	- -	108
5.—Watering	- -	ib.

CHAPTER XIII.—LIVE STOCK, page 116

SECTION 1.—Cattle	-	-	ib.
2.—Sheep	-	-	120
3.—Horses, and their use in Husbandry			
compared with Oxen	-	-	127
4.—Hogs	-	-	132
5.—Rabbits	-	-	134
6.—Poultry	-	-	ib.
7.—Pigeons	-	-	135
8.—Bees	-	-	ib.

CHAPTER XIV.—RURAL ECONOMY, 136

SECTION 1.—Labour, Servants, Labourers, and			
Hours of Labour	-	-	ib.
2.—Provisions	-	-	140
3.—Fuel	-	-	141

**CHAPTER XV.—POLITICAL ECONOMY AS
CONNECTED WITH OR AFFECTING
AGRICULTURE, - - - 142**

SECTION 1.—Roads	-	-	ib.
2.—Canals	-	-	-
3. 4.—Fairs and weekly Markets			145
5. 6.—Commerce and Manufactures			146
7. 8.—Poor and Population	-	-	148

**CHAPTER XVI.—OBSTACLES TO IMPROVE-
MENT, INCLUDING GENERAL OBSER-
VATIONS ON AGRICULTURAL LEGIS-
LATION AND POLICE, - - 152**

**CHAPTER XVII.—MISCELLANEOUS
OBSERVATIONS. - - 156**

SECTION 1.—Agricultural Societies	-	ib.
2.—Weights and Measures.	-	159

**CONCLUSION.—MEANS OF IMPROVEMENT
AND MEASURES CALCULATED FOR
THAT PURPOSE, - - - page 160**

APPENDIX.

SECTION 1.—Observations on the Sale of Corn by Sample - -	163
2.—Observations on Dealers in Corn and Cattle - -	165
3.—Observations on Millers -	167
4.—Rare Plants found in Hereford- shire - - -	169





AGRICULTURAL SURVEY
OF THE
COUNTY OF HEREFORD.

CHAPTER I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES, VIZ.
SITUATION, EXTENT, DIVISIONS, CLIMATE,
SOIL AND SURFACE, MINERALS, WATER.

SECTIONS I, II.—SITUATION, EXTENT, AND
DIVISIONS.

HEREFORDSHIRE is an inland county, in form nearly circular, and in situation between $51^{\circ} 53' 7''$ and $52^{\circ} 29' 43''$ north latitude, and $2^{\circ} 28' 30''$ and $3^{\circ} 19' 32''$ west longitude of London.

The extent from Ludford on the north, to the opposite border, near Monmouth, on the south, is thirty-eight miles; and from Clifford on the west, to Cradley on the east, thirty-five miles. The quota of militia under the original act was 480, to which number 660 were added by the supplementary act of the year 1798.

The earliest inhabitants on record were the Silures, who greatly distinguished themselves in opposition to the Roman invaders, but were at length subdued by

2 SITUATION, EXTENT, AND DIVISIONS.

them in the 73d year after the Christian æra. Under the heptarchy, the present Herefordshire formed part of the kingdom of Mercia, and was the last which submitted to the Saxon authority.

It adjoins Shropshire on the north, Worcestershire on the north-east and east, Gloucestershire on the south-east, Monmouthshire on the south-west, Brecknockshire on the west, and Radnorshire on the north-west.

The celebrated hills of Malvern also constitute a kind of natural boundary on the east, and the Hatterell (or Black) Mountains present as formidable a barrier on the west; from these and other eminences, Herefordshire exhibits altogether a scene of luxuriance and beauty, certainly not surpassed, perhaps not equalled, by any county in the kingdom. Some detached parts are situated beyond the general outline; of these, the parish of Farlow is wholly insulated by Shropshire, that of Rochford by Worcestershire, Lytton Hill by Radnorshire, and a considerable tract of land called the Futhog* (Ffwddog, in the British language), and a few acres on the Devaudin-hill by Monmouthshire. One instance also obtains of a reversed disposition; the parish of Edwin Loch being entirely bordered by the county of Hereford, although forming a part of that of Worcester. It comprehends two hundred and twenty-one parishes, which are arranged in eleven hundreds; and include the city of Hereford, the two borough towns of Leominster and Weobly, and the five other market towns of Ross, Ledbury, Kington, Bromyard, and Pembridge. It sends eight representatives to parliament, namely, two for the county, two for the city, two for Leominster, and two for Weobly. Ledbury, Ross, and Bromyard, anciently had representatives, but voluntarily declined the privilege on account of the

* "Secunda fertilitatis laude inter Angliæ provincias acquiescere haud facile est contenta."—CAMDEN.

SITUATION, EXTENT, AND DIVISIONS: 3.

expense then attached to those who exercised the right of electors.

According to the act of 43 Geo. III. for taking an account of the population of Great Britain, the number of inhabitants, in the year 1805, amounted to 89,191.

The following is a list of the hundreds and parishes.

BROXASH HUNDRED

Contains twenty-six parishes, viz.

Amberly	Pencomb
Avenbury	Sapey
Bodenham	Stanford Bishop
Bridenbury	Stoke Bliss
Bromyard	Stoke Lacy
Collington	Sutton St. Nicholas
Cowarne Magna	Sutton St. Michael
Cowarne Parva	Tedstone Delamere,
Felton	Tedstone Wafre
Grendons	Thornbury
Helenswick	Whitbourn
Marden	Withington, and
Ocles	Wolferlow

EWIAS LACY HUNDRED

Contains seven parishes, viz.

Cludock	Michaelchurch Escle
Cusop	Rowlston, and
St. Margaret's	Walterston
Llansilow	

GREYTREE HUNDRED

Contains seventeen parishes, viz.

Aston Ingham	Brockhampton
Brampton Abbots	Dormington

4 SITUATION, EXTENT, AND DIVISIONS.

Townhope	Ross
Hope Mansel	Soler's-Hope
How Caple	Upton Bishop
Linton	Walford
Marcle Magna	Weston-under-Penyard, and
Mordiford	Woolhope
Putley	

GRIMSWORTH HUNDRED

Contains twenty-three parishes, viz.

Bishopston	Mansel Gamage
Breynton	Mansel Lacy
Bridge Soler's	Monnington on Wye
Brinsop	Moreton on Lug
Brobury	Norton Canon
Burghill	Pipe and Lyde
Byford	Staunton on Wye
Canon Pyon	Stretton Sugwas
Credon Hill	Wellington
Hampton Bishop	Wormsley, and
Holmer	Yazor
Kenchester	

HUNTINGDON HUNDRED

Contains eight parishes, viz.

Brilley	Huntingdon
Clifford	Kington
Eardisley	Whitney, and
Hergest	Winforton

RADLOW HUNDRED

Contains twenty-four parishes, viz.

Aspertou	Bishop's Frome
Aylton	Bosbury

SITUATION, EXTENT, AND DIVISIONS:**5**

Canon Frome	Marcle Parva
Castle Frome	Moreton Jefferies
Coldington	Munsley
Colwall	Pixley
Cradley	Stoke Edith
Donnington	Stretton Grandison
Eastnor	Tarrington
Eastbach	West Hide
Ledbury	Weston Bagard, and
Lugwardine	Yarcle

STRETFORD HUNDRED**Contains fifteen parishes, viz.**

Almely	Lyonshall
Birley	Monkland
Dilwyn	Pembridge
Eardisland	Shobdon
Kingsland	Staunton on Arrow
King's Pyon	Stutford, and
Kinnersley	Weobley
Letton	

WEBTREE HUNDRED**Contains twenty-seven parishes, viz.**

Alansmore	Dore
Backton	Dorston
Blackmere	Eaton Bishop
Bredwardine	Ewyas Harold
Bullingham Upper	Hom Lacy
Callow	Kenderchurch
Cleghonger	Kentchurch
St. Devereux	Kingston
Dindor	Madley
Dewlas	Moccas

6 SITUATION, EXTENT, AND DIVISIONS.

Peterchurch	Turmaston
Preston on Wye	Vowchurch
Thrupton	Wormbridge
Tibberton	

WIGMORE HUNDRED

Contains fourteen parishes, viz.

Aston	Kinsham
Aynestry	Leinthal Starks
Burrington	Leintwardine
Byton	Lingen
Downton	Stepleton
Elton	Titley, and
Knill	Wigmore

WOLPHEY HUNDRED

Contains twenty-four parishes, viz.

Brimfield	Laystars
Croft	Leominster
Docklow	Lucton
Edwin Ralph	Ludford
Eye	Middleton
Eyton	Orlton
Farlow	Puddlestone
Hatfield	Richard's Castle
Hereford Parva	Rochford
Hope	Sarnsfield
Humber	Stoke Prior
Kimbolton	Yarpole

WORMELOW HUNDRED

Contains thirty parishes, viz.

Aconbury	Boulston
Ballingham	Bridstow

SITUATION, EXTENT, AND DIVISIONS. 7

Birch Magna	Llandinabo
Birch Parva	Llangarran
Dewchurch Magna	Llanrothall
Dewchurch Parva	Llanwarn
Dewsall	Marstow
Foy	Orcop
Ganarew	Pencoyde
Garraway	Peterstow
Goodrich	Sellack
Harewood	Tretire and Michael Church
Kentland	Welsh Newton
Kilpeck	St. Wconard's
King's Caple	Whitchurch

THE CITY OF HEREFORD

Contains six parishes, viz.

All Saints	St. Nicholas
St. John Baptist	St. Owen's
St. Martin's	St. Peter's

SUMMARY.

	Parishes.	Inhabitants.
Broxash Hundred contains	26	9,717
Ewias Lacy - -	7	3,073
Greytree - -	17	8,938
Grimsworth (without the city)	23	5,659
Huntingdon - -	8	4,482
Radlow - -	24	10,752
Stretford - -	15	7,518
Webtree - -	27	7,548
Wigmore - -	14	4,491
Wolphey - -	24	11,393
Wormelow - -	30	8,792
Hereford City - -	6	6,828
	<hr/> 221	<hr/> 89,191

SECTION III.—CLIMATE.

Dr. Fuller remarks in his *Worthies of England*, that “there cannot be given a more effectual evidence of the healthy air in this shire, than the *vigorous vivacity* of the inhabitants therein. Many aged folks,” he adds, “which in other countries are properties of the chimnies, or confined to their beds, are here found in the field as able (if willing) to work. The ingenious Sergeant Hoskyns gave an entertainment to King James, and provided ten aged people to dance the *Moorisk* before him, all of them making more than a thousand years; so that what was wanting in one, was made up in another; a nest of Nestors not to be found in another place.”* The air and climate, however, vary considerably in different parts and elevations in the county. Virgil and the other Roman poets celebrate the west wind as the most genial in Italy, being perhaps mellowed by its passage over the Mediterranean; but in this county, no air, generally speaking, is more harsh and unkind than that, which proceeds from the west.

This is probably to be attributed to the extensive tracts of mountainous country, which in that direction is seldom without snow during the winter, and is often bleached with it even late in the spring.

Thus also in the southern parts of India, when the wind blows over land, the air becomes almost intolerably hot, and by inspecting a map of that country it will be seen, that such winds must pass over sandy deserts, and an immense tract, strongly heated by the sun. Thus, by a parity of reasoning, it follows that the west and north-west borders of Herefordshire are more cold

* Fuller's *Worthies*, fol. 33.

than other parts ; and this conclusion is fully confirmed by experience and observation. The vicinity of Ross is the most early in vegetation.

SECTION IV.—SOIL AND SURFACE.

The soil of Herefordshire in its general character is a mixture of marl and clay, of great fertility, and containing a certain proportion of calcareous earth. No beds of chalk or flint are found within its limits, but, as in all clays, small particles of flint in the form of sand enter into its composition. Below the surface are strata of limestone, often beautifully intersected with veins of red and white, somewhat resembling calcareous spar. Near Snodhill Castle, in the Hundred of Webtree, it becomes a species of that genus of fossils which is called Marble, and was in considerable use and estimation as such during part of the seventeenth century.

Towards the west borders of the county, the soil is often cold and ungenial, but still argillaceous or clayey, resting on nodules of impure limestone, or on a base of soft crumbling stone, which perishes by exposure to air and frost. That part of the county, in the aggregate, can boast of no high degree of fertility ; its climate also is comparatively cold from greater elevation, as well as from the other causes noticed in the preceding section.

In many places towards the east, the soil is loose and shallow, covering stone of small value, provincially termed the *dun-stone* : the more favored spots in this direction are found well adapted to the culture of hops. Deep beds of fine gravel are particularly met with on the site and in the vicinity of the city of Hereford, which occupies a situation nearly central in the county.

A large proportion of the hundred of Wormelow, on the south, consists of a light sand, which has been much improved in value, by the introduction of lime as a manure. The heaviest crops of wheat are produced in a clayey tract extending from Hereford towards Ledbury.

The gross number of acres in the county are estimated at 600,000 : deducting 30,000, or one acre in twenty for the sites of towns, roads, water, houses, yards, and buildings, and 50,000 more for waste lands and woods, there remain 520,000 acres of cultivated ground ; the better parts of which are extremely favorable to the growth of trees of all kinds.

SECTION V.—MINERALS.

Iron-ore was discovered in the sandy district of Wormelow hundred as early as the time of the Romans in Britain, and many of the hand-blomaries used by them have been met with on Peterstow Common, and also considerable quantities of ore imperfectly smelted. Camden remarks, in his *Britannia*, that the town of Ross was famous for smiths in his time, which seems to imply at least a facility in procuring the materials of their trade. Phillips also in his provincial Poem on Cider, asks,

“ Why should the Chalybes or Bilboa boast
“ Their hardened iron, when our mines produce
“ As perfect martial ore !”

Of late years, however, no iron has been manufactured in Herefordshire ; but very extensive works are situated in the Forest of Dean, at the distance of a few





richer ore
and other
be improved
actually been
ad ore have
situated on
it does not
discovered.
been made;
attering, no

clays, there
ller's earth,
the want of
ion in their
from other
g occasion-
states of the
lith.

erefordshire
Arrow, the
se the Wye
purposes of
and flour to
I also in the
parts of the
h language,
quent varia-

Map
of the
Principal Rivers & Streams
of
HEREFORDSHIRE.

SHROPSHIRE
WORCESTER
TENBURY
LITTLE HOREFORD
GLoucestershire
LUDLOW
Downton Castle
of Ludlow
Coxall Knoll
Dunham Brin

miles only from the tract alluded to; a richer ore is probably met with there, and the situation and other circumstances being more favourable to the improved modes of extracting it, the practice has gradually been discontinued here. Small particles of lead ore have occasionally been found in the lime rocks situated on the north-west parts of the county; but it does not appear that any other mineral has been discovered. Many attempts to find coal have recently been made; but although first appearances have been flattering, no success has hitherto attended them.

Of the more rare kinds of earths and clays, there have been found, red and yellow ochres, fuller's earth, and tobacco-pipe clay; but probably from the want of an adequate supply, or from some imperfection in their qualities, they are now generally procured from other places. Fuller's earth is, however, still dug occasionally for sale, in small quantities, on the estates of the late Honourable Edward Foley, of Stoke Edith.

SECTION VI.—WATER.

The principal rivers and streams of Herefordshire are, the Wye, the Lug, the Munnow, the Arrow, the Frome, the Teme, and the Leddon. Of these the Wye is the most beneficial to the immediate purposes of agriculture; in the conveyance of wheat and flour to Bristol, of coal for burning limestone, and also in the conveyance of lime from the kiln to distant parts of the county. The Wye is called, in the British language, *Gwy*, and in the Latin, *Vaga*, from the frequent variations of its course.

" Meander, who is said so intricate to be,

" Has not so many turns and cranking nooks as she." *

" Pleas'd Vaga echoes through her whirling bounds,

" And rapid Severn hoarse applause resounds." †

About the year 939, Althelstan having reduced the Britons to a temporary subjection, appointed the river Wye to be the boundary between England and Wales. ‡ And to this day, the Welsh side abounds with names of places derived from the British language, whilst they rarely occur on the other: "Inde vagos Vaga Cambrenses, hinc respicit Anglos." § The Wye rises, as well as the Severn, near the summit of the mountain of Plimlimmon in Montgomeryshire, and having divided the counties of Brecknock and Radnor, it enters that of Hereford between the parishes of Whitney and Clifford.

Passing Hereford, Ross, Monmouth, and Chepstow, it is received into the channel of the Severn, having watered and adorned a tract of this county from forty to fifty miles in extent, not only equal in its varied beauties to any scenery of a similar kind in England, but worthy perhaps to be compared with the most admired views on the continent. These beauties have been delineated by so many able writers, such as Mr. Mason, Mr. Gilpin, Mr. Ireland, and others, that it is not attempted to detail them here. The general character of the river, between Whitney and Hereford, is mild and pleasing, consisting of delightful reaches, with the most agreeable landscapes and luxuriant scenery on their sides. From Hereford to Ross its features occasionally assume more of boldness; but under Capellar-hill, and between Caple and Fawley, the reaches are again strikingly beautiful.

* Drayton's Polyolbion. † Pope's Ethic Epistles.

‡ Dr. Powell's Chronicle of Wales. § Neckham.

Approaching Goodrick Castle, between Ross and Monmouth, a peninsula seven miles in extent is formed by the circuit of the river, whilst the neck of land reaches only one mile between the opposite points.—New and pleasing objects now rapidly succeed each other; and the romantic village of Whitchurch, stupendous hills, and hanging rocks, exhibit altogether a climax of beauties picturesque, sublime, and terrific. Various articles connected with husbandry are conveyed to, and from Hereford on the Wye, in barges containing from eighteen to thirty tons; but either a large or small supply of water is equally fatal to the navigation.

The latter is experienced during the greater part of a dry summer, when shoals barely covered with the stream occur very frequently; in winter, heavy rains, or snow dissolving on its banks within this county, have the effect of gradually adding a few inches to the depth; but, when these rush in torrents into its channel from the mountains of Brecknock and Radnorshires, they occasion an almost instantaneous overflow, and give it a force, which defies all the ordinary means of resistance or controul.* By this impetuosity, large quantities of land are frequently removed from their situations, on the one side or the other, and new channels have thus been formed in various places.

To this impetuosity is also to be ascribed, the want of a number of bridges, adequate to a safe and easy communication between different parts of the county, and

* The greatest flood experienced of late was occasioned by a fall of rain and the melting of snow on the 5th February, 1795, when the river rose fifteen feet in twenty-four hours, and did enormous damage through the county, destroying bridges, drowning cattle and sheep, and sweeping off valuable plank and timber from the wharfs.

so highly essential in agricultural concerns. The original cost of building, and the heavy expense of repairs have so much discouraged undertakings of this kind, that in the whole extent of the Wye through Herefordshire, there was only one bridge, that of Hereford, until the year 1597.

An Act of Parliament, which stated in the preamble, the inconveniencies of the ferry, and the number of lives lost in the passage, was then obtained for erecting a second, at Wilton near Ross. Since that date two more have been added, in order to facilitate the intercourse with Wales. One of these was built at Bredwardine, under an Act passed in 1762, and the other at Whitney, under an Act passed in 1780. That of Bredwardine, which is composed of brick, after sustaining great damage by the flood of 1795, has continued to resist the violence of the current; but that at Whitney has already been twice destroyed, and was again renewed on stone piers, A. D. 1802.

Some attempts have been made to effect a safe and regular navigation on the Wye; with this view, an Act of Parliament passed 14th Charles II.; but no further steps were then taken. A similar Act passed 7th and 8th William III. and heavy assessments were levied on the county, with little or no effect. At the present time the subject is again under agitation, and an engineer is engaged to make a report on the practicability of scooping out channels through the principal shoals which obstruct the navigation at low water; of confining the current in those places within narrow limits; and for making a towing path for horses instead of men.

The principal fish taken in the Wye, is the salmon, which is well known to leave the sea at various periods, and penetrate, as far as is practicable, towards the sources of the greater rivers, where they deposit their

spawn secure from the ebbing and flowing of the tides. Other motives appear also to attract them, as the season of coming is not confined to that of spawning, nor does it seem to depend, in any particular degree, on a greater supply of food than usual; an occasional change of water is probably grateful, if not essential to them.— They are found in the Wye at all times, but they are only in perfection from December to August. The assertion of Dr. Fuller, that “the salmon of the Wye are in season all the year long,”* is very erroneous.— They formerly, however, abounded so much, that it was a common clause in the indentures of children apprenticed in Hereford, that they should not be compelled to eat salmon more frequently than twice in every week.

But the various obstructions to their passage made by the erection of ironworks, which prevent their advancing further, unless the river be swelled far above its usual height, together with some illegal means of taking them by *cribs*, have of late years rendered precautions of this kind altogether unnecessary. It seems also probable, that the rivers Severn and Wye, independent of these grounds of complaint, have not been frequented of late years by salmon in that abundance, which formerly prevailed.

The price of salmon in Hereford market was formerly one penny per pound; it now varies from eightpence to half-a-crown, according to the time and other circumstances. The degrees of perfection, in which they are taken, vary not only with the season, but also in proportion to the time elapsed since they have quitted the sea. After a short continuance in fresh water, they tend rapidly to impoverishment; and as they are stationary at no other time, but when there is not a sufficient stream to admit of their proceeding, a

* Dr. Fuller's Worthies, p. 34.

moderate swell puts the *new fish* in motion, and enables the fishermen to calculate their approach with considerable accuracy. They are very rarely found to advance against a current of very cold or very hard water; when therefore the Wye is swelled by snow dissolving in large quantities from the sides of the mountains towards its source, which occasionally happens as late as April or even May, all attempts to take them are suspended for the time. Nor are they frequently intercepted by the fisherman, when returning to the sea, as it is known that the voyage which they have performed has deprived them of their principal value; and in this state they are denominated *old fish*. The spawn, deposited in the river, produces fish of a very minute size, which about April becomes as heavy as a gudgeon, but more taper and delicate in their form; these are in some parts termed salmon-fry or salmon-pinks, but are here known by the name of *last-springs*, from the date of their annual appearance, and are readily taken by the artificial fly. And if this mode of catching them was alone resorted to, the supply of salmon would probably be far more abundant than it now is. Two kinds of last-springs are found in the Wye; the one, which is the larger and more common sort, leaves the river during the spring floods; the other is termed the gravel last-spring, and is met with particularly on shoals, during the whole of the summer. The general opinion is, that the last-springs, having made a voyage to the sea, return *botchers* in the beginning of the following summer. Botchers are taken from three to twelve pounds weight; they are distinguished from the salmon by a smaller head, more silvery scales, and by retaining much of the delicate appearance of the last-spring.—In the third year they become salmon, and often weigh from forty to fifty pounds each. These are the

generally received opinions respecting the progress of the last-spring to the botcher and salmon ; but it must not be omitted, that some able naturalists of the present time contend, that the last-spring and botcher are each distinct in their species from the salmon, and that the botcher resembles the *suin* taken in the Welsh rivers, or even that it is the same fish. A question has also been suggested, whether the gravel last-spring may not proceed from the botcher. Other sea fish occasionally taken in the Wye are, shad, flounders, lampreys, and lamperns ; but none of these are met with frequently, or in abundance. A shoal of shad is generally the forerunner of a shoal of salmon ; flounders have been caught from February to May ; the season for lamperns is during March and April ; and that of lampreys, May and June. The lamprey, which is highly esteemed as a delicacy, removes the pebbles from particular spots in the most rapid stream, and thus forms a very insecure retreat, which is provincially termed a *bed* ; and in these they are taken with a spear. The female is of a rounder form than the male, and contains a large quantity of spawn, which is deposited in the bed, and fecundated after passing through the body of the fish. The lamprey appears to possess an internal heat, equal perhaps to terrestrial animals.

Besides these, the Wye has the usual kinds of river-fish, including pike, grayling, trout, perch, eels, and gudgeons.

2. The river Lug rises in Radnorshire, and entering Herefordshire on the north-west border near Stapleton-castle in the hundred of Wigmore, is almost immediately augmented by a stream called the *Wadel* ; when taking a direction nearly east, it receives the *Pinsley* (once the *Oney*), at Leominster. Inclining afterwards towards the south, it is aided by the more considerable

stream of the Arrow, between Eaton and Stoke, in the hundred of Wolphy, and of Frome, between Lugwardine and Mordiford. The whole is after received by the Wye, immediately below the pleasant village of Mordiford, after passing a fine and fertile part of the county, about thirty miles in extent, without calculating the circumflexions in its course. The Lug is in general too narrow and too much sunk within its banks to be an object of beauty; in some other respects it resembles the Wye, being impatient of control, and liable to sudden overflow, not solely from causes common to most rivers, but also from being dammed up or driven back by the higher current of the Wye, at the point of their junction.

A similar inconvenience, with respect to navigation, is experienced when the Lug is swelled by partial rains, which have not equally affected the Wye; a rapidity and force are then given to the Lug in its discharge into the Wye, which it will probably be ever difficult to restrain or correct. An Act of Parliament passed in 1663, and a second about thirty years after, for the purpose of rendering the Lug navigable, but unforeseen difficulties arose, and nothing was effected. A private subscription was applied in the year 1714, with more success for a time, and a few barges navigated as far as Leominster; but either from want of skill in the architect, or from the obstacles before stated, a high flood, which followed soon afterwards, so materially injured the locks and all that had been done, that no attempts to repair or renew the works have been subsequently made. The several kinds of river fish found in the Wye are also taken in the Lug; but, although the channel of each is particularly deep where they join, the sea fish common to the Wye are rarely

met with in the Lug. This is perhaps to be attributed to a greater degree of cold and hardness in the water of the latter.

3. The Munnow rises on the east or Herefordshire side of the Hatterel mountains, and is joined near Longtown in the hundred of Ewyas Lacy, by the Escle and Olchon, which have their sources not far from that of the Munnow. Watering a sequestered and pleasant vale in a direction nearly from north to south, it receives at Alteryannis (formerly the seat of the Cecil family), a brook anciently termed the Bothenay, according to Dugdale, but now styled the Hothney, which springs above the once celebrated abbey of Llanthony, and still flows by its venerable remains. Leaving Alteryannis, the Munnow becomes the boundary between this county and that of Monmouth, receiving near Pontilas the united streams of the Dore and the Worme; the former of which rises at Dorston (Dore-town) in the hundred of Webtree, and intersects a rich and beautiful valley; the latter rises near Alansmoor in the same hundred. With these aids the Munnow becomes a considerable river, and continues to be the provincial boundary, until it passes Llanrothal in Wormelow hundred, when it leaves Herefordshire, and flowing by Monmouth, is received by the Wye immediately below the town.

Trout, gudgeons, eels, and cray-fish, are taken in the Munnow:

4. The Arrow has its source in Radnorshire, and entering this county near Kington, joins the Lug a few miles below Leominster; the name is said to be derived from the swiftness of its current. Its fish are, trout, grayling, and cray-fish.

5. The Frome rises near Wolfrelow in the hundred of Broxash, and being joined near Stretton-Grandison by the Loden from Grendon Bishop, Cowarne, &c. is

received by the Lug near Mordiford. It is liable to frequent and sudden floods. Trout are its principal fish.

6. The Teme or Team enters Herefordshire from the north-west near Brampton Bryan, and passes alternately through parts of this county and Shropshire. Near Tenbury (Temebury) it makes a more considerable circuit into Worcestershire, and returning to Whitbourn below the town of Bromyard, and receiving a small brook from Sapey, it finally quits Herefordshire immediately after, and discharges itself into the Severn between Malvern-chase and Woodbury-hill in the county of Worcester. Pearls have occasionally been found in the muscle-shell of the Teme; and a small fish resembling a last-spring, but weighing one-third of a pound, and consequently much larger than the last-spring, frequents this river.

7. The Leadon or Leddon rises above Bosbury in Radlow hundred, gives name to the town of Ledbury, which it passes, and entering Gloucestershire becomes tributary to the Severn soon after. It is thus curiously personified and described by Drayton in the seventh song of his Polyolbion:

“ Ledon, which her way doth through the desert make,
 “ Though near to Dene ally’d, determined to forsake
 “ Her course, and her clear lims among the bushes hide,
 “ Lest by Sylvans, (should she chance to be espide)
 “ She might unmaiden’d go unto the sovereign flood!
 “ So manie were the rapes done on the watery brood,
 “ That Sabrine to her sire great Neptune forc’d to sue,
 “ The ryots to repress of this outrageous cruce.”

A variety of inferior brooks come in aid of the rivers and streams noticed above, many of which contribute to the public benefit by turning mills for grinding

corn, and some are rendered useful in the way of irrigation. The Garran and the Gamar abound with crayfish, which are in season during the summer.

Some springs on the Herefordshire side of Malvern hills were formerly deemed medicinal, and acquired the name of Holy Wells; these were noticed in a communication made by Dr. Beale to the Royal Society about the year 1656. They probably partook of that purity which continues to recommend the waters of Malvern, and contributes, with the salubrity of the situation, and the habits of exercise, to render Malvern a place of public resort.

Several petrifying, or rather perhaps incrusting, springs are also met with in such hilly parts of Herefordshire as contain limestone, and consist, as much as elevated land does, of argillaceous marle. Of this description are several springs near Moccas, Fownhope, Llanrothal, and Wormsley. A small well near Richard's castle in Wolphey hundred discharges small bones when disturbed, and they resemble the vertebræ and other bones of the frog; it is hence termed Bone-well.

CHAPTER II.

STATE OF PROPERTY.

SECT. I.—ESTATES AND THEIR MANAGEMENT.

THE greatest estates in Herefordshire belong to, the Governors of Guy's Hospital in London, the Duke of Norfolk, the Earl of Oxford, the Earl of Essex, Sir George Cornwall, Bart., R. P. Knight, Esq., S. Davies, Esq. &c. &c.

These estates are divided into farms comprising on an average, from two hundred to four hundred acres each, and are let to tenants at rents varying with the quality of the soil, the proportion of meadow, the situation, and other circumstances. The extensive property now held by the Governors of Guy's Hospital formerly belonged to the Brydges family. The late Duke of Chandos had his residence at Aconbury, four miles south from Hereford; he was an active promoter of every measure, which had for its object the prosperity of the county, or the city of Hereford. His hospitality was liberal and diffusive; and a considerable part of his wealth was expended on the spot which furnished it; but disappointed in his expectations of support in a political contest, he became disgusted with his situation, and disposed of his residence and all his estates in the county, to the present possessors.

Thus they remain under the mortifying change, that the rents are annually remitted to the metropolis, and the mansions destroyed, or converted to purposes far humbler and less generally useful, than those for which they were designed.

The large estates of the Duke of Norfolk were acquired by marriage with the heiress of the Scudamores of Hom Lacy ; and much of the land of Somerset Davies, Esq. was purchased from the Crofts of Croft Castle.

Other estates, but unfortunately a few only, are occupied by their proprietors. Of this class, that of Charles Bodenham, Esq. of Rotherwas, stands the most conspicuous. T. A. Knight, Esq. of Elton, James Phillips, Esq. of Bringwyn, John Kedward, Esq. of Westhide, and John Apperley, Esq. of Withington, are amongst the leading instances. Their estates vary from 400*l.* to 1000*l.* per annum ; they are constantly resided on by their owners ; are cultivated and managed in the best style, and are applied to introduce and promote the several improvements in practical agriculture.

Characters of this high respectability were formerly much more numerous than they are at present ; and the advantages to be derived from their example and practice, are too obvious to require a particular recital.

SECTION II.—TENURES.

A considerable part of the hundred of Wormelow is called *Irchenfield*, and is situated near Ross. Much of ancient history attaches to this district, which seems to have been one of the petty states into which Wales was formerly divided.

After the subjugation of that country, or at least of this part of it, by the English, Irchenfield was annexed to the demesnes of the British crown. It was next granted or leased to the Talbot family, who were in possession of it as early as 22d. Edward III. (A. D. 1349), when a license was obtained by Richard Talbot, from the crown, enabling him to build a prison for malefactors in his castle of Goodrich, which is situated in this district. The original grant to this family was probably made by Edward I. soon after the year 1283; but Hugh Burgo had a grant of privileges in Irchenfield as early as 12 Henry III. A. D. 1228.

It is styled in old writings "The Hundred of Irchenfield with the Manor of Wormelow." The Talbots held it in the form, and with the privileges of an ancient baronry, and its various subordinate members did homage at the superior court. The manor of Wormelow still comprises several lordships, and passing from the Talbots and the Greys, to the late Duke of Kent, it was sold at his death, and is now the property of Mrs. Clarke of the Hill near Ross. Amongst other peculiarities, the tenure of gavel-kind has prevailed in this district, from the remotest periods to the present time. The leading feature or principle of this tenure is well known, viz :

That in cases of persons dying intestate, the law of primogeniture has no effect, and lands descend not to the eldest, youngest, or any one son only, but in equal divisions to all the sons together. But the privilege and the security of disposing of property by will are now so fully understood and experienced, that the provisions of this ancient and peculiar tenure are rarely resorted to.

In the manor of Hampton Bishop, which belongs to the see of Hereford, another tenure prevails, which

occurs nearly as seldom as that above mentioned ; it is that of *Borough English*, by which the youngest son succeeds to the burgage, tenement, &c. on the death of his father, to the exclusion of his eldest and other brothers. Littleton supposes this tenure to have been founded on the principle, that the age of the youngest more particularly required the assistance of the parent. Other authors have given a less grave reason for this custom ; they suppose, that the lord of the fee had anciently a right to violate the seventh commandment with his tenant's bride on the wedding night, and that, therefore, the tenement descended to the youngest son as the more certain offspring of the tenant. The custom certainly prevailed in Scotland, and was abolished by Malcolm III. Amongst the Tartars it was general, and perhaps amongst many other nations at that early period, when they existed in a pastoral state ; for in that situation of life, the elder sons successively left their parents, (probably with some assistance from them,) as soon as they were able to manage for themselves, and consequently the youngest son, who remained at home, had the best claim, and also the greatest occasion for a provision for himself.

It will be imagined that this tenure, like gavel-kind, is not often acted on, but one instance at least has occurred here within a very short period from the present time.

Copyhold property is not so common in this as in many other districts, and in consequence, courts are less regularly held, and the privileges of the lords, being in various instances inconsiderable in value, are less tenaciously preserved. The continual expenses attending property of this description, the vexatious litigations to which it gives rise, and the distress to which families are frequently reduced by its operations, render it an

object much to be wished, that some general criterion might be established by law, so that the landlord might purchase the interest of the tenant, or the tenant obtain that of the lord, by a fair and known compensation.

Leasehold estates are more common, and are liable to many of the objections against copyhold property.— They seem to be relics of the feudal system, which is no inconsiderable argument in favour of their abolition.

The principal lessors are, the Bishop, the Dean, the Chapter, the Prebendaries and other members of the Cathedral Church, the Corporation of Hereford and other towns, the College of Vicar's Choral, &c. Perhaps in round numbers, it may not be far from accurate to state, that two-thirds of the whole county is freehold, and the remaining third under the other tenures, which have been particularized above.

CHAPTER III.

BUILDINGS.

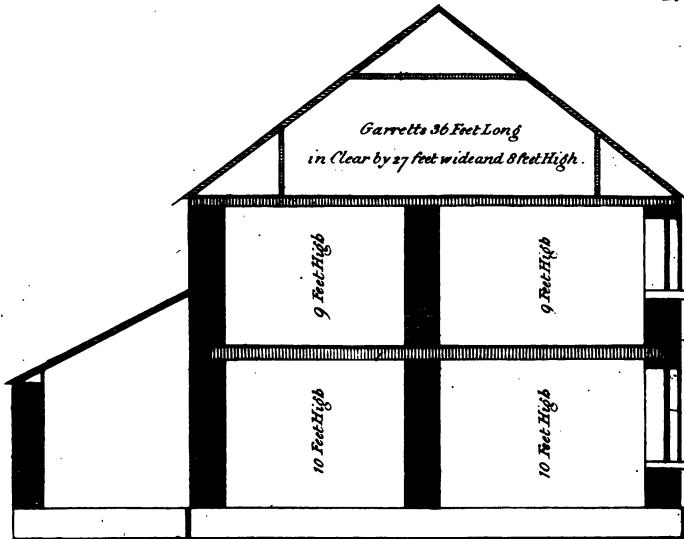
SECTION I.—HOUSES OF PROPRIETORS.

TH E following noblemen, gentlemen, &c. being principal proprietors of land, have mansions of various forms and sizes, within this county :

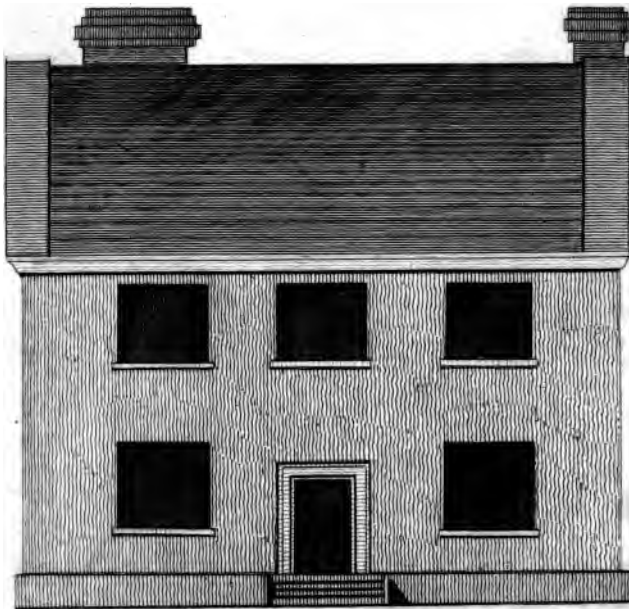
The Duke of Norfolk, Hom Lacy.
The Earl of Essex, Hampton Court.
The Earl of Oxford, Eywood.
Lord Somers, Bransell Castle.
Sir Henry Tempest, Hope-End.
Sir Hungerford Hoskyns, Harewood.
Sir George Cornwall, Moccas Court.
Sir G. C. B. Boughton, Poston.
Right Hon. Thomas Harley, Berrington.
Hon. Andrew Foley, Newport.
Hon. Mrs. Foley, Stoke Edith.
J. P. Birch, Esq. Garnstone.
Charles Bodenham, Esq. Rotherwas.
John Brewster, Esq. Burlton Court.
John Barneby, Esq. Brockhampton.
—— Biddulph, Esq. Ledbury.
John Geers Cotterell, Esq. Garnons.
Richard Chambers, Esq. Whitbourn.
N. L. Charlton, Esq. Ludford.

E. B. Clive, Esq. Whitfield.
Somerset Davis, Esq. Croft Castle.
L. Dansey, Esq.
John Evans, Esq. Byletts.
J. Freeman, Esq. Letton.
R. S. Fleming, Esq. Dynmore.
W. Greenly, Esq. Titley.
J. M. Green, Esq. Cagebrook.
R. C. Hopton, Esq. Canon Frome.
Wm. Hanbury, Esq. Shobdon.
James Hereford, Esq. Sufton.
Rich. Payne Knight, Esq. Downton Castle.
Thos. Andrew Knight, Esq. Wormesley Grainge.
John Keysal, Esq. Morton Lug.
J. Lechmere, Esq. Townhope.
Edm. Lewis, Esq. Michael Church.
John Matthews, Esq. Belmont.
Wm. Money, Esq. Marcle.
Edm. Pateshall, Esq. Alansmore.
Uvedale Price, Esq. Foxley.
James Poole, Esq. Hom End.
Rev. John Phillips, Eaton Bishop.
James Phillips, Esq. Bringwyn.
Samuel Peploc, Esq. Garnstone.
John Scudamore, Esq. Kentchurch Castle.
T. P. Symons, Esq. Pengethley.
Mrs. Sheldon, Newcourt.
T. R. Symonds, Esq. Meend.
John Stedman, Esq. Bosbury.
J. Salway, Esq. Moore.
James Walwyn, Esq. Longworth.
Thos Westfaling, Esq. Rudhall.
E. Walwyn, Esq. Helens.

To face page 29.



Section through Middle of House.



Not only Street

Front of Arrendal Farm House, in the County of Hereford.

SECTION II.—FARM-HOUSES, OFFICES, REPAIRS.

The old farm-houses of Herefordshire, as well as of other counties, are inconvenient, and the offices ill adapted to the purposes for which they were designed. Water and shelter appear to have been principally consulted in selecting a spot for building; these are confessedly objects of no trifling importance, but there are other objects also, which equally require and deserve attention. In the new ones (of which there are many), the defects of the old are generally supplied, to the great advantage and comfort of the farmer. The Governors of Guy's Hospital are in this, and I believe in every respect, particularly attentive to the interest and convenience of the tenants. Under the management of their present steward, James Woodhouse, Esq. several of the old houses have been taken down, and others substituted on better sites, and on the most approved plans. When practicable, a gentle declivity towards the south, which implies some eminence, is generally preferred: the building is adapted to the size of the farm to be occupied with it; the walls are constructed with stone, and the covering is of slate.

Particular care is taken that every part of the fold or yard shall be distinctly seen from the windows of the room, whether kitchen or parlour, which is most frequently inhabited by the tenant and his family: as much also of the land as possible, is within sight from that, or other windows.

The outbuildings form three sides of a square, the fourth of which is occupied by the house and garden wall: the former comprise barns, stables, cow-houses, feeding-stalls, pigsties, cider-mill, and warehouse for the liquor. The annexed design represents the plan

of a house recently finished, in the parish of Pipe, on Arrendal farm, belonging to the Governors of Guy's Hospital, and being of the rent of 210*l.* per annum, it is recommended as a model worthy of adoption where practicable, or as furnishing a general basis, which will admit of variations in size, height, and other particulars when circumstances require them.

Houses and buildings of all kinds are usually put into good repair by the proprietor, at the commencement of a lease, and the tenant engages to preserve them in good condition afterwards; having sometimes the advantage of unconverted timber from the estate when necessary.

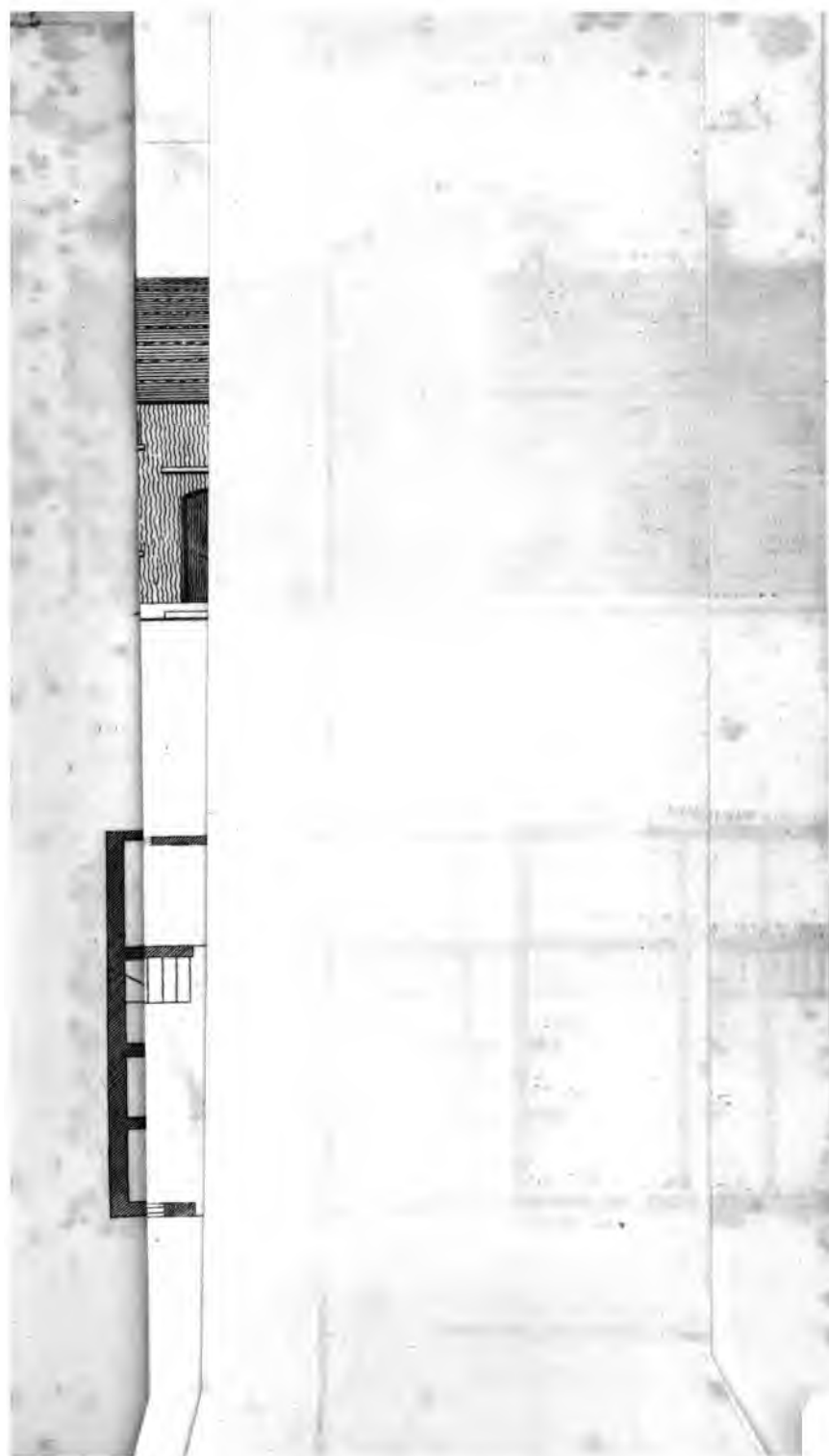
SECTION III.—COTTAGES.

The cottages in Herefordshire are generally of very humble and inferior construction: many are built on waste ground by their proprietor, whose means are far from adequate to the attainment of comfort and convenience.

The annexed design will be found to combine in some degree these objects, with strict economy.* It represents (without the pediment) ten cottages under one roof, recently built by the parish of Holmer, for the accommodation of as many poor families, not requiring more extensive apartments.

A small garden is annexed to each tenement; they are raised with stone two feet above the ground, and then carried to the roof with timber and brick in squares, or as it is here termed *nogged together*. They are built by contract at 32*l.* 10*s.* and contain on the ground-floor,

* A little ornament above the doors would improve much the appearance of these cottages.



30

of a
Arre
Hosp
it is
where
which
partic
Ho
good
a leas
condi
of unc

Th
humb
waste
from
nience

Th
some
repres
one re
the ac
quirin

A si
raised
carried
or as i
by con

* A
appeara

1000

one room in front, twelve feet by fourteen, and six feet and a half high ; also a shed behind ; and above, a bed-chamber of the same size as the front room below. They were to have been covered with pan-tile laid in mortar ; but if built with brick altogether, with the addition of the pediment and better tile, the price would be 50*l.* each.

Of late years a valuable addition has been made to the minor objects of agriculture, by the introduction of *strawberries* in cottagers' gardens. On light soils, when proper care is taken to keep the roots free from weeds, and the plants well watered at the season of blossoming, very considerable profits are derived from this practice. Parts of the waste lands on Aconbury and Shucknell Hills, have been particularly applied to those purposes, with great success and little trouble. The red Carolina, or Bath scarlet, are generally preferred ; and their fruit sold readily in July at ten-pence per full quart in the Hereford market. Their culture is certainly worthy attention.

CHAPTER IV.

MODE OF OCCUPATION.

SECTION I.—SIZE OF FARMS, AND CHARACTERS OF FARMERS.

IN all countries there should be farms of various sizes: the large and the small have their respective merits, and each in its way contributes to individual and public prosperity. Against small farms it may however be urged, that the occupier of forty, eighty, or one hundred acres, lives hard, labours hard, and brings little to market. Where lime is to be carried, and where a strong soil is to be ploughed to a proper depth and in proper season, four horses at least must be kept on the farm. If these be not fed well, they cannot work well, and to feed them will require half the produce of the farm.

The success of the farmer on deep and stiff soils (such as are best adapted to the culture of wheat, the most important of all our plants) essentially depends on depositing the seed in the ground at that particular time, when the ground is in a proper state to receive it.

The little farmer can employ but a single team, and in course must proceed slowly. The large farmer on the contrary, can at once apply the whole strength of his farm to any particular field which is ready for

sowing, and is thus enabled generally, even in difficult seasons, to get in the seed at a proper moment.

The large farmer can alone employ the ox with advantage, for its feet and general habit almost entirely disqualify it for the whole business of a farm, which must be required where one team only is kept.

Twelve oxen, with six horses, are perhaps fully competent to the business of a farm of five or six hundred acres; and such a farm may be, and sometimes is better cultivated than another of one hundred and fifty acres, worked by four horses: it may also bring a proportionably larger quantity both of corn and animal food to market; but a very large share of active industry, perseverance and skill, are necessary to the production of these good effects, and instances of the contrary are certainly not wanting.

It may be objected with too much truth, that the farmer often grasps at more land than he has capital to cultivate, but the objection is perhaps equally applicable to the great and small farmer.

Without large farms, improvements in agriculture and breeding would be cramped if not suppressed; and without small ones, no persons but those of property could embark in agricultural pursuits; and the lusty peasantry, which forms so material a part of our national strength, would lose the stimulus and the reward of industry. Of late years, the practice of consolidating several estates in one, has much reduced the number of small farms, and has left very few opportunities by which an industrious couple can devote their 50*l.* or 100*l.* acquired by personal exertions, to stock the number of acres proportioned to their capital, and thus bring up a family with some degree of comfort and some idea of independence. This circumstance being known, it

operates as a check upon matrimony, tends to licentiousness of manners, and discourages population. Mr. Malthus, in his able and ingenious work on the "Principles of Population," has paid particular attention to this branch of national economy.

"The labourer who earns eighteen-pence a day, and lives with some degree of comfort as a single man, will hesitate a little before he divides that pittance amongst four or five, which seems to be but just sufficient for one. Harder fare and harder labour he would submit to, for the sake of living with the woman he loves; but he must feel conscious, if he thinks at all, that should he have a large family, and any ill-luck whatever, no degree of frugality, no possible exertion of his manual strength, could preserve him from the heart-rending sensation of seeing his children starve, or of forfeiting his independence, and being obliged to the parish for his support. But surely, the love of independence, none would wish to be erased from the heart of man."

A practical instance of the effect of consolidating several farms in one, may be adduced from the parish of Holmer, in this county. Twenty years ago Holmer comprised at least ten farms; the number is reduced at this time to five.

At the former period, the several farmers lived respectably and comfortably; they maintained their families with decency, they inured them to habits of industry, and in the aggregate, they reared nearly double the stock which is now reared: if they supplied the public markets with so much less corn as the increased demand of their family required, (and much of that proportion they must have consumed in any other situation of life) they made amends in an increased supply of veal, lamb, poultry, and butter, which brought those articles into

general and ready use, and kept the prices of others, within proper limits.

On the whole, it is submitted to the consideration of land-owners, whether they will not most essentially contribute to that public good and prosperity, (of which their own constitutes an individual part) when they arrange their property in divisions of various extent, from five, to five hundred acres, and thus afford to every class, the means of improving their condition by habits of industry, and of promoting the general welfare by individual exertion.

The temptations to proprietors, to consolidate estates, are numerous and weighty ; the saving in repairs, the facility in collecting rents, and the responsibility of tenants, cannot escape their attention ; but every rank must make some sacrifices in favour of the public, and the landed interest in general are not yet to be accused of want of patriotism in this instance, nor of bearing a too small portion of national burthens in any other.

In a word, the demands of government and the great manufacturing districts can be best supplied by great farmers ; but small towns and villages must look to little ones for their supply, or they will have serious cause to lament their suppression.

The old-fashioned farmer of Herefordshire receives any new experiment in agriculture with great hesitation, if not reluctance. When its utility is confirmed by repeated trials, he slowly and gradually falls into the practice ; but he wisely leaves the experiment and the risque to those who recommend or suggest it ; and happily the county at this moment is well provided with agriculturists, who possess the means and the spirit, to undertake the patriotic task.

SECTION II.—RENTS, &c.

Payments are almost invariably made in money for the occupancy of lands. When a person becomes tenant of an estate at Candlemas, he is required to discharge half a year's rent at the Candlemas following, and to make a similar payment at the expiration of every six months afterwards. In particular situations, the tenant further devotes the use of his waggon for a few days in the year to the service of his landlord; and this is usually applied to the conveyance of coal for the consumption of the latter.

The best arable lands are rented on an average at twenty shillings per acre; the best meadow at forty shillings. In the vicinity of towns, and in other situations particularly eligible, meadows are let at four pounds an acre, or even more; and the produce of that meadow frequently exceed two tons of hay in good seasons. The poorer arable may be rented at ten shillings or less; and meadows of inferior quality and in distant situations, at eighteen or twenty shillings.

SECTION III.—TITHES.

Most of the lands in Herefordshire are subject to the payment of tithes, and they are collected in kind in very few instances. The average composition in lieu of them varies from three shillings and sixpence, to four shillings for every pound of money paid in rent.

This is certainly less heavy than the compositions for tithes in many other places, although they have been

much increased since the enormous price of grain in the years 1800 and 1801. They are still however paid with reluctance, and invariably considered by the occupiers and proprietors of land, to be serious obstacles to agricultural improvements.

Coppices are usually retained by the owner, and previous to the sale of their fallage by auction (which is generally practised), an agreement is made on the subject of tithe, viz. one tenth of the sum they produce; and subsequent disputes are thus prevented.

Of the various modes proposed to effect the desirable object of a general commutation of tithes, that of a corn-rent seems to have met with less objections than most others which have yet been proposed; still however nothing has been seriously attempted, and the subject remains open to further discussion.

It has not perhaps occurred to every one, that tithes in their present form, have a direct and powerful tendency towards increasing the prices of wheat and every other grain, by creating obstacles to its culture, and thus diminishing the quantity which would otherwise be grown. But the single fact, that, an acre of land under the culture of wheat, is liable to a deduction on account of tithe, in nearly a ten-fold proportion to an acre of land, grazed by cattle or sheep, is surely sufficient evidence that tithes must operate unfavorably to the culture of grain, and consequently to its abundance and cheapness. How desirable then is such a commutation as would render this payment equally heavy on every acre of land according to its value, whether it be applied to the culture of grain, or to the production of animal food! Under this impression, it is now proposed, that in lieu of tithe, a tax be imposed (on the principle of an equal land-tax) on every estate, according to its value, for the support of the clergy. The

is presumed, counteract or prevent these serious evils; encouragement would be given to an extended culture of grain; and a new motive to industry and exertion would be found in the consideration, that the most indolent farmer must contribute an equal sum with the most active and successful cultivator.

The effects of tithes in a religious view are obvious and important. The terms which too generally prevail between the clergyman and his parishioners, prevent habits of intercourse, expose him to attacks, and destroy the purpose of his labours. And to this source, may perhaps be ascribed in some degree the rapid increase of sectaries, and the comparatively greater influence possessed by their preachers, than by the ministers of the church of England.

SECTION IV.—POOR RATES.

Unprovided with manufactories, or other modes of employing women and children, so as to enable them to acquire their own maintenance, the county of Hereford must necessarily contribute largely to the plan adopted by the legislature for the support of the poor.

That plan was doubtless founded on the most benevolent principle, and its provisions reflect honor on the country

But the public manner in which relief is afforded under it, is attended with consequences injurious to the community, by destroying that spirit of independence, and those ideas of honest pride, which stimulate a man to use his utmost exertions in support of himself and his family. The rates or loans applied to this purpose are gradually increasing, and they are severely felt by

the numerous class of small house-keepers, particularly in towns. During the unprecedented price of grain in the year 1801, more than one instance in the city of Hereford occurred, within the observation of the writer of this report, when a house-keeper, with a shop and decent connexions, was compelled to dine frequently on potatoes and water, in order, that eighteen-pence might be saved to meet the demands of the overseer!

The returns made under the act of 26 George III. report the net expenses for maintaining the poor throughout the county of Hereford, in the year 1776, to have been 10,393*l.* 7*s.* 2*d.* The average of the years 1783, 4, and 5, as returned under similar authority, was stated at 16,727*l.* 18*s.* 2*d.*; at present they nearly amount to 20,000*l.* being in round numbers, double the sum raised thirty years ago.

SECTION V.—LEASES.

Leases of old dates were generally binding for twenty-one years; but from the extraordinary advance in the prices of grain, which has been so often alluded to, landed proprietors now grant leases more frequently in three terms of seven years each, determinable at either of those periods by landlord or tenant.

The advantages of this mode, preponderate in favor of the landlord, whilst the uncertainty of the time checks the improvements of the tenant, and induces him to limit the capital which he employs. In proportion as these effects are produced, the public are sufferers. The provisions in the clauses of Herefordshire leases have few peculiarities. Those granted by R. C. Hopton, Esq. of Canon-Frome, after binding the tenant to keep the premises in repair, further stipulate, that the landlord, with proper persons, shall have power

once in every year, to survey the state of the buildings, and make a report to the tenant of what appears necessary to be done on the premises, under that particular clause. This regulation has been attended with the best effects, and it is presumed, is worthy of general adoption.

SECTION VI.—EXPENSE AND PROFIT.

It is much to be regretted that the accounts of a farmer occupying even a large estate, and consequently employing a large capital, should so seldom be deemed of sufficient importance to merit a share of attention equal to that bestowed by a tradesman on a concern of one-twentieth part of the value. A regular and plain detail in writing of what is purchased, and what is sold, of what is paid and what is received, in short, a regular account of creditor and debtor, can alone furnish the desired information, and accurately point out what system or what measure contributes to profit, or what to loss. This plan is rarely adopted in Herefordshire, being almost wholly confined to gentlemen farming their own estates.

Mr. Goulding, of Moreton, an intelligent and skilful farmer, is amongst the few tenants who now pursue it; but in order to facilitate its general adoption, it seems advisable that an account book should be published, properly arranged and divided into columns, under every head which experience and the calls of the farmer suggest, and with a broader column for general observations.

This might in the first instance be presented by landlords to their tenants; or a small portion of the funds of agricultural societies might be applied to this purpose with good effect. Mr Young, in his "Farmer's Calendar," has presented a model and basis for a publication of this kind in a larger size, and it

would be no difficult task to make such alterations as would meet the peculiarities of each district; so that the " Herefordshire farmer's account book" might include the expenses and profits of his favorite cider: and the Cheshire-man in his provincial ledger, might estimate correctly the value of his cheese.

The profits and losses attending the culture of an acre of wheat on fallow land in Herefordshire, may be estimated as follow, on a good soil :

[illegible]

The general management of a farm rented at 200*l.* per annum, would probably stand nearly thus, in profit and loss, on a good soil.

<i>Dr. EXPENSES.</i>			<i>Cr. PROFIT.</i>		
	<i>£.</i>	<i>s. d.</i>		<i>£.</i>	<i>s. d.</i>
Rent	200	0 0	360 bushels of wheat at		
Tythes	40	0 0	10 <i>s.</i> per bushel	180	0 0
Servants' wages	34	0 0	300 do. barley, at 6 <i>s.</i>	90	0 0
Labourers' ditto	24	0 0	100 do. peas at 6 <i>s.</i>	30	0 0
Extra harvest-men	7	0 0	20 cwt. hops	60	0 0
Tradesmen's bills	50	0 0	Sale of oxen, cows, and		
Poor and other taxes	58	0 0	calves	150	0 0
Malt, hops, and cider	60	0 0	Profits from sheep	100	0 0
Lime	20	0 0	Ditto from pigs, poultry,		
Hop-poles	10	0 0	dairy and sundries	50	0 0
Expense at fairs and markets	8	0 0			
Clothing, groceries, &c. for					
the family	45	0 0			
Interest of 1500 <i>l.</i> employed					
as capital	75	0 0			
Sundries	15	0 0			
	<u>646</u>	0 0		<u>660</u>	0 0

CHAPTER V.

IMPLEMENTS.

THE implements of husbandry used in this county have few peculiarities. Waggon, intended for frequent use on the turnpike roads, have usually wheels of six inches in breadth, carry about three tons and an half in weight, and are drawn by six horses abreast.

One waggon of this description is usually attached to every considerable farm ; the others are on narrow wheels, as better adapted to husbandry, roads, and common purposes ; these are drawn by four horses, and convey a load weighing two tons and an half. An application is now making to Parliament to admit of their being drawn by five horses, when on the public roads, and, if the weight be limited, the method cannot fail of being highly beneficial.

Carts are also drawn on six inch wheels for many purposes ; such as conveying manure from the folds, or materials for repairs ; indeed they appear to be gradually superseding the use of the narrow wheeled carts.

The plough, very generally resorted to, is the light Lammas without a wheel ; it is drawn by three or four horses, according to the nature and condition of the soil, and was preceded by a long, aukward, and heavy implement now entirely out of fashion. The plough now used is particularly well adapted to the requisite uses in sowing wheat, and to every other purpose which requires light and easy ploughing.

The following alteration in its structure has been found a great improvement. The common mould-board is made straight and flat, with an iron plate at the bottom; in the improved form, this board is taken off during the sowing season, and its place supplied by another, which is curved at the bottom, thus:




These ploughs follow each other in every ridge, and each mould-board varies in a small degree from the others. The advantages are these: a ridge ought to be thrown up in a cycloidical form, thus,



in order that the reens may be narrow and the ridges wide. The curvature of the lower part of the mould-board sweeps the side of the ridges, and prevents those little grooves and furrows being left on its sides, which retain the snow and rain in winter; for supposing the ridge to be formed thus,



the bottom of the mould-board will move in the curves marked A. A. A. instead of the nearly upright lines, thus:  Mr. A. Knight finds the new form very advantageous.

Every farmer should have at least two ploughs, the one with the iron mould-board, and the other with long

wooden mould-board curved as above described. The latter will be found useful, not only in sowing wheat, but also in the last ploughing for turnips or barley. The length of the mould-board, beam, and handles, give great steadiness to the whole, and it is very light altogether. A few farmers are now trying the two wheeled plough; but the Lammas is yet esteemed decidedly superior, and requires a holder and a lad to drive the horses.

Double, or two-furrow ploughs have rarely been tried; but they may be certainly used with success on light and sandy soils. Drill ploughs have hitherto received very little attention. T. P. Symonds of Pengethley, M. P. for Hereford, has, however, obtained good wheat crops by the use of Mr. Cook's drill plough; but the practice does not appear to extend itself, and the workmen of the county cannot easily be induced to encourage its adoption. Turnips have been drilled by Mr. Knight with the best effects; and where hoeing them is not generally practised, nor well understood, drilling has many recommendations, from the facility afforded of keeping the ground clear between the rows, and setting out the plants at proper distances. The harrows and rollers have no singularity; the spiked roller might be introduced with good effect on stiff soils, and the roller, which has a division in the middle, would be found convenient, particularly in turning.

Cars, sometimes having a pair of wheels, and sometimes none, are in general use for the common business of the farm, and are found convenient in the conveyance of hurdles, harrows, and wood for fuel.

A threshing machine, constructed by Mr. Gilroy, has lately been erected by Mr. Harris, of the Marsh estates in the parish of Bridge Solers. When the wheat yields well, and has been hand-reaped, so as to leave a long,

stubble for mowing afterwards, the powers of this machine are equal to the threshing eighty bushels of wheat, or an equal proportion of other grain, in one day. It requires the labour of two men, three stout boys, and four horses. Mr. Harris means to add to it the patent cylinder invented by Mr. Palmer, which he recommends as essential to clean threshing.

CHAPTER VI.

ENCLOSING.—FENCING.—GATES.

ENCLOSURES, under the authority of an act of Parliament, have been resorted to, within late years, much more frequently than at distant periods. The additional value, which land invariably acquires by enclosing, has been generally found to repay the expenses of the process; but new inducements now offer themselves in the increased demand for corn, and the consequently advanced prices which it affords. Still, however, many commons remain without this improvement, but their aggregate bears a small proportion to the enclosed part of the county.

The practice of allotting land in lieu of tithes prevails generally, and is one of the most popular, and perhaps beneficial, conditions.

New enclosures are ditched, with posts and rails on the bank; but quickset or hawthorn plants should invariably be used on these occasions; and the agricultural society of the province has endeavoured to excite more attention to this excellent mode of fencing, by offering premiums for “the greatest quantity of hawthorn quick properly planted for fencing an estate, or fairly sold by a nurseryman for that purpose.” They further require, that the quick shall be raised from seed by the candidates for the premium, and regularly transplanted at a proper time. In bringing this fence to perfection, great care should be taken in weeding the

plants during the two or three first years, and in securing them from cattle and sheep ; their native weapons will protect them afterwards with a little care. The lands in the parish of Hom Lacy, which are the property and in the occupation of the Duke of Norfolk, exhibit, under the conduct of his steward, Mr. Braithwaite, some of the best young fences of this description throughout the county, and are of no small extent.

But perhaps it would be a material improvement in this very useful practice, if the plants were permitted to remain in the nursery in rows distant one yard from each other, until they become of a size which would make an immediate fence, and require no protection.—The enormous expense of posts and rails would thus be saved, and the plants would thrive with at least as much certainty, as if they had been set at a younger age.

Oak timber is universally used in the construction of gates ; no other material having been yet applied to that purpose, which has not proved less effectual in its object of security, and more expensive from the frequency of renewal.

CHAPTER VII.

ARABLE LAND.

SECTION I.—TILLAGE.

WHEAT is the grand dependence of the farmer, who is situated on the stiff clays, with which this county abounds; but it is conceived, that the following course, which formed the old routine of crops on that description of land, is liable, with this management, to serious objection. A good fallow on a clover-ley, well worked, limed, and manured, produces on an average about twenty bushels of wheat per statute acre. In the following spring it is sown with peas, sometimes beans, after one ploughing, and without manure; the produce is from twelve to fourteen bushels per acre. After two ploughings and a partial dressing, or much more frequently with no dressing whatever, it is again sown with wheat in October; and if this *brush* crop, as it is termed, produces somewhat more than half the quantity yielded by the fallow, the grower is satisfied. In the following spring it is sown with barley and clover seeds after two ploughings, but still without manure, and as may be expected from the exhausted state of the land, it generally affords a very inconsiderable crop.

Sheep are turned on the young clover as soon as the barley is removed. Sometimes oats or turnips precede

the barley on a small part of the land, and a few winter vetches are occasionally introduced, but still without manure, or any preparation, than one or two plougings.

After mowing one crop of clover, it is fed with cattle in the following spring, and afterwards a part remains for seed. The fallowing then recommences, and nearly the same system is repeated. In this manner almost one-third of the arable land is constantly under the culture of wheat, and that third, during its preparation for the seed, is termed the *odd mark*.

Wheat is sown, with very few exceptions, and those for experiment on a small scale, in the broadcast manner. Drilling or setting by the hand has been very rarely resorted to here. The latter mode is plainly recognised by Virgil ; * but under the general term of *fruges*, its application to wheat may perhaps be disputed. It will not be supposed, that the routine above described is still invariably adhered to, it is given merely as the old-fashioned course, from which many farmers are deviating daily with success. The county at present may boast of many, who turn their attention to agricultural pursuits in such a way, that no danger can be apprehended of the want of progress in agricultural improvements, or of a want of trial in every reasonable experiment. It might be invidious, if practicable, to offer a list of the names of all those who are most distinguished by their industry and skill throughout the county, but the following persons have obtained public premiums from the Agricultural Society since its institution, and therefore are considered in the first class of farmers, with a full admission, that there are many others fairly entitled to the same distinction.

* "Et ipsis
Unguibus infodiunt fruges."

Premiums for the best new varieties of the apple have been awarded to Rev. Mr. Alban, of Ludlow ; Mr. Baylis, of Brierly ; T. A. Knight, Esq. of Elton ; and W. Symonds, Esq. M. D. of Hereford.

Premiums for best cattle and various branches of husbandry, have also been thus adjudged :—

To Mr. Apperley, of Withington ; Mr. Barnet, Ledbury ; Mr. Croose, of Ocle ; I. G. Cotterell, Esq. of Garnons ; Rev. Mr. Coke, Lower Moor ; W. Downes, Esq. Hinton ; R. H. the Earl of Essex ; Mr. Edwards, Hom Lacy ; Mr. Fencolt, Eardisland ; Mr. Freen, Hampton ; late Hon. E. Foley ; Mr. Gwyllim, Staunton ; Mr. Goode, Yazor ; M. Galliers, King's Pyon ; Mr. Hughes, Marcle ; Mr. Hudson, Hom Lacy ; Mr. Hudson, Dindor ; E. Jones, Esq. Fawley ; Mr. James, Willersley ; Mr. Jones, Breinton ; Mr. Jefferies, Lyon's Hall ; Mr. Jefferies, Pembridge ; T. A. Knight, Esq. Elton ; Mr. Knill, Hom Lacy ; Mr. Kedward, Westhide ; Mr. Lowe, Gattertop ; Mr. Moore, Wellington ; Mr. Oakes, Aymstey ; Mr. Parry, Arkstone ; Mrs. Packwood, Cleonger ; Mr. Powell, Titley ; Mr. Pritchard, Eyton ; Mr. Skyrme, Stretton ; Mr. Smith, Sufton ; Mr. Stevens, Lene ; Mr. Tanner, Hampton Court ; Mr. Tully, Haywood ; late Mr. Tully, Huntington ; Mr. Watkins, Brinsop ; Mr. Williams, Thinghill ; Mr. Williams, Brinsop ; Mr. Winter, Fownhope ; Mr. Weaver, Bunshill ; E. Walwyn, Esq. Marcle ; Mr. Yeomans, Howton.

SECTION II.—FALLOWING.

Fallowing, or repeated ploughing, is found in all cases the best preparation for sowing. The Romans were

fully aware of the good effects of this practice, for Pliny observes, that they ploughed their lands generally five times, but in Tuscany nine times.* Mr. Evelyn also notices, that ploughing will so greatly alter a soil from its former nature, as to render the harshest and most uncivil clay, obsequious to the husbandman."†

Tillage also destroys weeds, and reduces the earth to small particles, thus rendering it sufficiently loose and porous to admit of the easy growth and extension of the roots and fibres of the grain to be cultivated in it.

The spade is well adapted to these purposes, because it moves the ground eight or ten inches deep, turns it upside down, and covers the weeds with a quantity of earth, under which they rot, and contribute towards its fertilization; and this mode is founded on the just idea of the Flemings, that a farm should resemble a garden as nearly as possible. But the spade is too tedious, laborious, and expensive, to be practised on the larger scale of a farm; the plough is therefore substituted as cheaper and more expeditious, but in general it does not stir the earth so deeply, and often moves it in large bodies without sufficiently breaking it into pieces. To remedy this inconvenience, the celebrated Mr. Tull recommended a plough of his own invention, which had four coulter instead of one, and thus divided the earth raised by the shares into several narrow slips; but the resistance occasioned by the additional coulters was found to require a greater strength in horses, than the profits of the experiment would warrant. It was afterwards ascertained by a celebrated foreigner, M. de Chateauvieux, that the breadth of the furrow should be proportioned to the stiffness of the soil; and thus the resistance may be regulated on all kind of land. But

* Plin. lib. xviii. c. 20.

† Philosophical Discourse on Earth, p. 300.

the operation of repeated cross-ploughing, as now generally practised, aided as it is by exposure to frost and rain, so effectually breaks the hardest soils, that other measures are rendered less necessary.

M. Duhamel observed in his *Elements of Agriculture*, "that it is more advantageous to increase the fertility of land by frequent ploughings than by dung; because, in general, only a certain quantity of dung can be procured, as twenty acres of land will, in common cases, scarce produce as much dung as are necessary for five; whereas the particles of the earth may be divided and subdivided almost to infinity. The aids, therefore, which are derived from dung, must be limited, whilst no bounds can be set to the benefits that may accrue from ploughing." This appears to be over-rating the advantages of ploughing; but it is certain, that, when the particles of land adhere so closely together as to impede the extension of the roots of plants, in search of the nourishment they require, the plants themselves cannot grow with proper vigour, nor yield a proper produce. This is therefore to be corrected by frequent ploughings.

Lastly, repeated ploughings enable the land to receive and retain all the benefits to be derived from the floating vapours and dews of the atmosphere, which falling on hard ground, where it cannot penetrate, is readily exhaled by the next day's sun.

These then are the principles which have recommended frequent ploughings as the best preparatives for sowing, and which have led to its adoption more particularly in the culture of wheat, as the most important and indispensable of every produce. A brief recapitulation of them may not be deemed superfluous: ploughing tends to dissolve the too great adhesion of stiff soils, it facilitates the introduction of manure, it destroys weeds,

it opens the pores of the earth to receive readily the dews and vapours of the atmosphere, it enables the roots of plants to shoot more vigorously, and it brings the land into that state, which most easily admits of the depositing of seed. The particular modes, in which this practice is now generally pursued in Herefordshire, on different soils under the preparation for the culture of wheat, are as follow : on the clays, the first ploughing for a fallow commences on a clover-ley, as soon as the Lent grain is sown, that is at the end of April or beginning of May. Previous to this, about one hundred and twenty bushels of lime are spread on each statute acre, and are ploughed in, by shallow furrows, so as to mix most effectually with the turf of the surface. Six weeks afterwards, the fields are cross-ploughed, and in the beginning of August, sometimes with a little dung, but more frequently without any, they are ridged up for the sowing, which commences in the vicinity of Dore, where the management of this branch at least, is generally good, by the last week in September or the first in October. The produce, as before mentioned, averages from twenty to twenty five bushels per acre ; but the system, it is thought, would be improved by beginning to fallow immediately after wheat sowing, instead of deferring it until May, and this would more than compensate for the small share of feed which sheep derive from the clover-leys during the winter. The second ploughing then takes place immediately after the Lent grain is sown, the third in six weeks after, at the fourth, it is ridged up before the harvest begins, and at the fifth it is sown in the beginning of October. This practice gives an additional ploughing, and it has been adopted by several farmers with great success ; Mr. Knight, however, is unfriendly to this mode, and contends, that crops on clays may be injured

by too much pulverization. On the light lands near Ross, the first ploughing for a fallow is postponed to the end of July, or even to the beginning of August, in order that the sheep may avail themselves of whatever pasture the clover leys may afford, until they are sold at Ross fair on the 20th of July. In the month of May, the dung is hauled from the fold and placed in convenient heaps for spreading on the clover, as soon as the sheep are removed. As their heaps are to be exposed to the sun and air during two of the hottest months, a turf is generally laid on the top of each of them, that their virtues may not be exhaled and lost, before they are mixed with the soil. The second or crop-ploughing takes place six weeks after the first, and the third after an equal interval, when lime is introduced in proportion to the deficiency of dung, and the whole is ridged up for sowing in November.

A better practice in this district, and which has been occasionally adopted, is as follows: let the wheat stubble be fallowed in November, a second ploughing take place when the Lent grain has been sown; and a third, with lime and dung about the beginning of June. At the latter end of the same month, sow turnips, hoe them twice, and feed them off by sheep properly hurdled.

In the spring, sow it with barley and seeds, when twenty-five bushels of grain may be expected from a statute acre. Let the seeds be fed off till November, and then commence the fallowing for wheat as before recommended; and twenty bushels per acre will be the average produce: peas may be occasionally introduced between the wheat and the turnips. The district now under consideration is termed the Rye-lands, and was reported by Dr. Beale, in the year 1636, to "refuse wheat, peas, and vetches," and to be adapted only

to the culture of "rye, hemp, flax, turnips, and parsnips."*

By the subsequent introduction of lime as a manure, it has been so fertilized, as to be successfully applied to the growth of every grain. The pastures also, which in Dr. Beale's time were stated to consist of "short and poor grass, or of a coarse and sea-green blade," have been improved in an equal degree.

Considerable care is taken, and very deservedly, in the selection of wheat for sowing. The produce of the chalk-hills of Oxfordshire is often procured for this purpose, and with good effect; but the farmer is more frequently satisfied with the finest seed he can obtain from soil of an opposite description to his own. The seeds being procured, his next attention is directed towards the steeping, which is generally considered to be of the utmost importance.

In this process the wheat is immersed in a large tub of urine or strong brine. By repeated stirrings the light and imperfect grains are brought to the top, and carefully skimmed off: the remainder is taken from the brine, after one night's soaking, and being thinly spread on a floor, it is powdered over with sifted lime, and put into sacks for use. The benefits of this practice are great, and easily understood: by sowing none but the most plump and perfect grains, the most vigorous plants must naturally be expected: the stronger the plant is, the more power it has to resist the inclemency of the winter, the less liable it is to disorders, and the more able to yield an abundant produce.

It is also attended with another, and that no inconsiderable effect: having absorbed a portion of offensive liquor, and being incrustated with a coat of lime, the

* Herefordshire Orchard, 1656.

grains must be comparatively secure from the depredations of vermin. Other and unaccountable advantages have sometimes been supposed to accrue from steeping; and one farmer has been known to excite the envy of his neighbours, by the possession of an invaluable receipt for making his brine, which by the addition of a few ounces of ingredients from a chemist's shop, was supposed to set all blights and smuts at defiance, and to add a two-fold fertility to his grain. But these *charms* or *secrets*, seem to resemble a practice much adopted in the seventeenth century, for giving new flavors at will to their apples and pears, by injecting aromatic and other juices into the trunks of the trees.

Mr. Knight sowed wheat in Elton during many years, which had been soaked in water only, that the lime might adhere to the seed, and his corn was always as free from smut and mildew as that of his neighbours.

The quantity sown on an acre varies from twenty to twenty-five gallons.

The importance of the tillage farmer to the public will not be disputed; and yet perhaps no branch of husbandry is clogged with so many obstacles to its improvement and success. This may in part appear by a statement of the comparative produce of an acre of good land under tillage, and that of an acre of similar land under pasture, with a debtor and creditor account of each for one year.

TILLAGE.

DEBTOR.

		£.	s.	d.
Rent	- - - -	1	0	0
Five ploughings, and the necessary harrowing for wheat	- - -	2	10	0
120 bushels of lime once in five years, at 6d. per bushel, including all expenses, will be 24 bushels per annum	- -	0	12	0
Repairing, hauling, and spreading four cart- load of dung per ann. on a similar average	0	12	0	
2½ bushel seed wheat once in five years	- - - £1	5	0	
Peas ditto 4 bushels	-	1	8	0
Clover do. 12lb. 8s.	} average	0	18	0
Or vetches 3 bushel 18s.				
Or ploughing 10s.				
Barley or oats average	-	1	0	0
Turnips 1lb.	- -	0	1	0
Expenses in five years		4	12	0
Ditto in one year	-	0	18	4½
Ploughing for peas crop (one)		0	10	0
Ditto barley and oats (two)		1	0	0
Ditto turnips (three)		1	10	0
Expense of ploughing in 5 years	3	0	0	
Ditto in one year	-	0	12	0
Tithes, or tenth of produce per ann.		0	10	2½
Average expense of culling, housing, thresh- ing, and bringing to market	-	0	8	0
Total Dr.		7	2	7

TILLAGE.

CREDITOR.

	£.	s.	d.
Wheat, 240 gallons, at 1s. per gal.	12	0	0
Straw - - -	1	0	0
Peas very uncertain crop, seldom averaging 20 bushel at 7s.	7	0	0
Peas haulm - -	1	0	0
Barley or oats (on an average rather high) 20 bushel at 6s.	6	0	0
Oats or barley straw -	1	0	0
Crop of clover (often plants ill)	3	10	0
Turnips - - -	4	0	0

Total produce of five years 35 10 0

Total Cr. (produce of one year) 7 2 0

Total Dr. - 7 2 7

Loss per acre 0 0 7

SHEEP PASTURE.

DEBTOR.

	£.	s.	d.
Rent, (supposing same field converted by the occupier to pasture) - -	1	0	0
Tythe wool - - -	0	1	4½
Ditto lamb's - - -	0	0	9
Total Dr.	1	2	1½

SHEEP PASTURE.

CREDITOR.					£.	s.	d.
Carcase	-	-	-	-	1	12	0
Wool	-	-	-	-	0	14	0
Total Cr.					2	6	0
Total Dr.					1	2	1 $\frac{1}{4}$
Remains for expenses and profit thereon					1	3	10 $\frac{1}{4}$

N. B. Little of the present tillage of Herefordshire would be well calculated for cattle, if converted to pasture; but where it could be so applied, the profits would be greater than on sheep.

These calculations certainly hold out a great inducement to the farmer to convert his tillage into pasture, and the immediate effect of such a measure must be felt in the reduced quantity and increased price of grain of every description.

But, unfortunately, this is not the only obstacle to the tillage farmer; the tax on horses used in agriculture operates also against the proper culture of the ground.

It has probably been supposed by the framers of this tax, that the number of horses will thus be diminished, and that of oxen increased: but it should be recollected that oxen, valuable as they are as *auxiliaries*, can never be made the *substitute* of horses; their constitution and habits will not admit of it; and the shoe with which they are occasionally furnished, affords but an imperfect protection on hard or stony roads. A tax of equal

amount might be laid on the rent of the estate (supposing that a farmer of two hundred pounds *per annum* required five horses) and would equally benefit the revenue, without diminishing the produce of the country : nor is it improbable that as the tax now stands, the nation loses more by the reduced quantity of grain, than the Exchequer receives as the amount of the impost.

The tax on malt (where cider and perry are not produced) falls also with accumulated weight on the tillage farmer ; and particularly so in the culture of wheat, as beer is required in large quantities during its harvest and threshing.

If a deduction of three shillings for every acre of wheat sown, were allowed to a farmer as a draw-back from the duty on malt consumed in his family, it is presumed, that the cultivation of wheat would be materially increased, and a tax as before on the farm *ad valorem*, would supply the deficiency in the national revenue.

And if to these considerations it be added, that every acre of tillage produces an excess of corn and animal food beyond an acre of pasture, amounting on an average to upwards of forty gallons of wheat, and eight pounds of meat, it is presumed, that more statements are not wanting to prove, that the tillage farmer is in want of that degree of encouragement from the legislature, which would materially conduce to the interests of the public.

A very considerable surplus of wheat is produced in the county, beyond the internal consumption, and admits of a large exportation every year to Bristol and other places, notwithstanding the quantity has been much diminished by the conversion of some of the best arable lands to other purposes.

The heaviest crops of wheat, generally speaking, are

produced in the vicinity of Hereford, and thence through the clays towards Ledbury. Lands thus situated are now rented from eighteen to twenty shillings the statute acre ; but abstracted from the pasture and meadow, the average price of all the arable land in the county, is probably not more than ten shillings. Wheat is generally reaped by parties of Welshmen from Cardiganshire, and other parts of South Wales ; but it is now gradually becoming a branch of labour amongst our natives.

Their mode, which is that of *hacking* it close to the ground, possesses many and great advantages, when compared with hand-reaping, and is worthy general adoption. It is more expeditious, as each labourer will reap one statute acre in a day ; it is less expensive, as they now undertake it at two shillings per acre, with provisions and liquor ; and it is further beneficial, by adding considerably to the stock of manure, through the increased quantity of straw which is thus acquired. The objection, that the weeds by this mode are brought into the barn and fold, is of no real weight ; for weeds cannot be more effectually destroyed than by mixture with the contents of the fold in a state of fermentation : whilst a long stubble remaining on the field, and thoroughly washed by the winter rains, is of little or no value under any management. Women and boys are employed at the expense of the farmer, to collect, bind, and stack the sheaves. The companies of Ancient Britons vary in number according to the extent of the work which they have previously contracted for. To four or five men there generally belongs one horse, unincumbered with bridle or saddle ; on this they ride in succession, taking little rest, and performing their journey with great expedition. One of the party understands enough of the English language and roads, to act as interpreter and guide.

They avoid as much as they can, the society of our natives, are temperate, laborious, and grateful; easily irritated and easily pleased.

Oats are grown in greatest abundance towards Wales, and also on parts of the eastern borders of the county. The richest meadows are those on the bank of the *Wye*, *Lug*, and *Frome*; they are rented from two to three pounds per acre. The price of labour is seven shillings weekly, in summer, with liquor and two dinners; in winter, six shillings, with similar privileges. The average produce of wheat per statute acre on a good fallow and tolerable soil, has already been estimated at twenty bushels; that of barley is about eighteen, oats about twenty, and peas about twenty: on very good clays, thirty bushels of wheat are sometimes grown.

Hop plantations prevail in different degrees throughout the county, but abound most towards *Worcestershire*. They were probably made here soon after the introduction of hops into England, which was about the year 1524: the mode of culture is similar to that adopted in other counties. Five hundred weight are esteemed as the fair produce of a provincial *hop-acre*, which contains two thousand poles, each root having on an average two poles. The plantations are more generally worked with the plough than with the spade, and this branch of agriculture has very much increased within these few years..

The preceding statement and observations include those crops which are commonly cultivated in *Herefordshire*, their mode of culture, produce, and other particulars.

SECTION IV.—CROPS NOT COMMONLY CULTIVATED.

Vetches are sown but seldom, and in small quantities. Autumn is generally preferred to spring, as a time for sowing them, but they can seldom be fed sufficiently early to admit of the subsequent process of a good fallowing on the land. Mr. Knight sows them in the spring, and mixes a few oats with them, which keep the vetches erect, and in a good state for cutting green with the sithe.

Rye, which with an equal proportion of wheat, constituted the bread-corn used in religious houses before their suppression, is now sown but sparingly, but grain thus mixed in flour during a time of scarcity or dearth, still retains the name of *monk-corn*, from the circumstances above-mentioned. Rye was formerly sown very generally in the light lands in the vicinity of Ross, and other parts of the county.

Buck-wheat or French-wheat is rarely resorted to as a crop, and perhaps its merits on good soil, whether to plough into the land in a green state as manure, or to bring profit by sale of the seed, are not very considerable. Hemp and flax are grown on a small scale only; nor do they appear to possess many inducements to the farmer to extend their culture.

Potatoes are gaining ground every year: near towns in particular, they are found a very profitable crop, by sale in the market; and in all situations when plentiful, they are applied to fatten pigs with great success: they are generally boiled for this purpose.

Their culture is conducted with the plough or the spade, according to the extent of the plantation: the

former implement is always used where there is room in setting, cleaning, and getting up.

Crops of cabbages for cows and oxen, are frequently reared in hop-yards, and occasionally in small fields appropriated to their culture only. Mr. Pritchard, of Eyton-mill, near Leominster, has had great success in this branch of agriculture, which requires a good soil and frequent hoeings.

The Swedish turnip has been introduced but a few seasons, and has made very considerable progress; its superior ability to resist the attacks of wet and cold weather, are well known, and form very strong recommendations to its culture.

The county is indebted to James Woodhouse, Esq. steward under the Governors of Guy's Hospital, for the introduction of this valuable species.

Mr. Knight, and Mr. Davis of Croft Castle, sowed them also about the same time. Mr. Knight is trying to improve their size and growth by introducing the farina of the English turnip into the blossoms of the Swedish; but the experiment is not yet complete.

CHAPTER VIII.

GRASS.

SECTION I.—NATURAL MEADOWS AND PASTURES.

THE most fertile meadows have already been noticed ; as situated on the banks of the river Wye, Frome, and Lug. Their produce is of the best quality, and well adapted to almost every purpose to which grass and hay can be applied: in fattening cattle it cannot be exceeded. But Herefordshire has no pretensions to rank amongst the dairy counties. It is supplied from Wales with excellent butter in tubs, for winter use ; and from Shropshire and Gloucestershire with cheese ; for although very good cheese is made in various parts of this county, it has generally been confined to private consumption, including all the demands of the farm-house. Of late, the improved modes of other counties have been adopted with some success ; and the vicinity of Bromyard produces cheese, which in the market of Hereford rivals the best of Shropshire in quality and price.

The general soil, however, of Herefordshire appears to be unfavourable to the making of cheese. Mr. Knight, with that accuracy and skill which he is known to possess on all subjects connected with agriculture and natural history in general, has proved by experiments, that equal quantities of milk in Herefordshire and Cheshire, will produce unequal quantities

of curd, highly to the advantage of Cheshire : and further, that better cheese has been produced in that county, from milk, half of which had been previously skimmed, than is produced in this, from milk altogether unskimmed. The want therefore of complete success in this valuable branch of rural economy, is not solely to be attributed to a want of skill in our dairy-maids ; and the cause of failure is rendered more difficult of discovery, and consequently more difficult to be remedied, from an observation that the plants were nearly the same in the Herefordshire and Cheshire pastures, on which the above experiments were made : white clover abounded in each, with the crested dog-tail grass, and rye-grass mixed with others in small quantities. Of such plants the pastures of Herefordshire are generally composed. A mode of managing sound meadows and pastures has lately been tried, and attended with a great increase of produce. The grass is mown as soon as it is in blossom, and consequently previous to the formation of seed. The after-grass is not grazed until it begins to contract a yellow appearance in the latter end of October or beginning of November. In this case, the ground remains covered during the winter with a portion of dead herbage, through which the young grass springs with the greatest vigour at an early period of the succeeding spring. Mr. Knight contends, that the sap in all plants ascends through the alburnous vessels of the root, and is dispersed over the leaf, whence it is returned to form new roots and buds, and to prepare them for vegetation. According to this theory, if the leaves be eaten off on mowing grounds, as soon as they are re-produced, the roots are deprived of their nutriment, and the plants, in consequence, vegetate weakly in the succeeding spring. Whether this hypothesis be well or ill founded, it is certain that the ground which is left with this portion

of the leaves of grass in the one season, is much more productive and more early in the next: and close-grazing will ever be found to decrease the quantity, although it should improve the quality of the following crops.

SECTION II.—ARTIFICIAL GRASSES.

Red and white clovers, trefoil, ray-grass, and hay-seeds from the loft or barn, are usually sown with barley, in laying down lands for pasture. In this process, sufficient care is not always taken to cleanse and drain them, nor is due attention paid to the seed made use of. After these precautions are taken, perhaps the most easy and practical mode of obtaining a good sward, is that of selecting, and sowing (with a light crop of barley and a good proportion of white clover in particular), the seeds collected, not indiscriminately from hay grown on any, or all the pastures, but from that only which is produced on an approved pasture or meadow, not dissimilar in soil and situation, to that proposed to be laid down in grass. This plan has been adopted by J. P. Symonds, Esq. of Pengethly, with complete success.

Seeds and clovers are rarely sown on wheats in the spring; but it is conceived that it might be done with advantage even under an improved management, and particularly on the *brush*-crop resorted to, under the old-fashioned course, if the clay be not too much condensed by the winter rains.

Lucerne has lately been planted in Herefordshire by several agriculturists with great profit.

The Flemings, whose husbandry was so much admired in the seventeenth century, were convinced, that

ten acres of the best vegetables for feeding horses and cattle, *when properly cultivated*, would maintain a larger stock of grazing animals, than forty acres of common farm grass. This opinion, which is founded in truth and confirmed by experience, gave rise to the culture of lucerne and other grasses; and its further success essentially depends on the degree of attention bestowed to the recommendation of having it “properly cultivated.” To this end, it is necessary that the soil be clean and rich, and the plants, particularly when young, weeded, hoed, and manured every year. The seeds should be sown in drills, and such a distance should intervene between each row, as to admit of these operations without injury to the plants. In short, lucerne should be treated rather as a garden than a field-plant; and it will make ample amends for the additional care it requires.

Amongst others who have cultivated lucerne in this manner, Mr. Josiah Newman, a very respectable farmer of Pear-hill, near Ross, gives the following account of his management, in answer to the writer's enquiries on this subject:

“The land I have found to answer well for the cultivation of lucerne, is a sandy loam, such as we term a good barley-soil. The ground should be very clean, and the drills about eighteen inches asunder. I used thirty pounds of seed to four acres, which I cut three times in the second year. I find much depends on its being well hoed; and particularly during the first year, it must be kept free from weeds. I cannot speak of the whole produce with certainty, being in the practice of having it mowed green every evening, and carted into sheds for the cattle: but the crops are very heavy, and my horses thrive better on it, than with any other keep, I ever gave them.”

Wm. Blount, Esq. of Hereford, M. D. is also a successful cultivator of lucerne, but on a smaller scale than that above-mentioned. His soil is a rich loam on a gravelly base ; and in summers, when frequent showers have moistened the roots, he generally cuts it no less than five times, in very large quantities. His horses and milking cows thrive on this food, beyond any other.

Sainfoin is very rarely sown in this county : possibly it might be tried with some success on the shallow soils, with dunstone underneath, which are found towards the eastern border of the county. It did not succeed on Mr. Knight's farm.

Chicory has been used by way of experiment in two instances. Mr. Towne, of Trevase, sowed a proper quantity with barley in the broad cast manner, on half a field, of light sand, and sowed the other half with the usual proportions of clovers and grass-seeds : the latter proved far superior in every respect ; like lucerne, it seems not adapted to broad-cast culture. The second experiment was by drilling in rows ; but in this mode, it was not found equal to lucerne, nor did horses and cattle appear to eat it with equal avidity.

Dutch clover is mown frequently with little mixture of other grasses, towards the west border of the county, and yields a very productive crop : it has been introduced in that district about fourteen years.

SECTION III.—HAY HARVEST.

Crops of clover and ray-grass are generally cut in July, and the meadow-grasses soon after. The clover is turned once only, unless an unusually heavy crop, or

wet weather, render it necessary to repeat the turning. Meadow grass when mown, is immediately spread thinly over the whole surface, and this operation is in this, as in some other counties, called *tedding*. It is then turned, and placed successively in rows, small cocks, beds, and large cocks. When sufficiently dried, the last process before hauling is that of collecting it into what are called wind-cocks; each of these contain about half a ton: in this state, they are considered as secure from any material injury under any weather whatever, and are frequently permitted to remain unmoved during a week or ten days, as best suits the convenience of the farmer. The name may possibly be derived from their being too large to be affected even by the most violent winds. Hay thus prepared, is usually brought into a bay formed in the manner of a Dutch barn, that is, open on the sides and covered at the top, where it continues until leisure is found to rick and to thatch it. Many modes of managing hay have been recommended, whilst making in wet and unfavourable weather, and some of these expedients may occasionally succeed: but in general, most practical farmers will admit, that in whatever state it may be, or whatever progress it may have made towards drying, the less it is disturbed during rain, the less will be the injury at last.

SECTION IV.—FEEDING.

Grazing and feeding cattle are seldom pursued in Herefordshire, except for the purpose of provincial consumption, and that almost invariably confined to heifers and cows. Smithfield, however, has often been supplied immediately from hence, with the fattest and

most valuable oxen in the market: but from the impracticability of driving them so many miles in that condition without injury, it is much more usual to dispose of them at the Michaelmas fair in Hereford, when five or six years old in a thriving condition, to the graziers of Buckinghamshire and other adjacent counties, where they are prepared for the London markets.

In fattening cows and heifers for provincial use, they are generally brought forwards by grass, and sometimes fattened with it altogether: in other cases, hay and turnips are added in stalls, and occasionally oil-cake.

CHAPTER IX.

GARDENS AND ORCHARDS.

THE apple and pear trees, which form the orchards of Herefordshire, are well known not to be the natural production of any soil or climate; the one being a variety of the *pyrus malus*, or crab, and the other derived from the *pyrus communis*, or common wild pear; as such, neither of them are noticed by Linnæus. * The native wild crab is subject to considerable diversity in the appearance of its leaves, and in the colour, shape, and flavour of its fruit. By selecting and cultivating the fairest and the best of these, all our valuable varieties have been produced, and by repeated propagation have been preserved for the time. This principle was clearly known by the ancients, whether they applied it to the apple or not:

“ Quare, agite o, proprios generatim discite cultus,
 “ Agricolæ, fructusque feros mollite colendo.” †

Normandy and other parts of the continent have occasionally furnished this county with several of these artificial varieties.

It does not appear, that orcharding became a considerable branch of rural economy in England before the reign of Henry the Eighth, when by the industry

* Essay on the Apple and Pear, &c, by T. A. Knight, Esq, 2d Edition, 8vo. Ludlow, 1801.

† Virgil, Geo. lib. 2.

of a person of the name of Harris, who was fruiterer to that king, the fields and environs of about thirty towns, in Kent only, were planted with fruit trees.*— This example probably introduced orcharding in Herefordshire and other counties, on a more enlarged scale than had been attempted before. But the period, when the plantations in Herefordshire acquired the peculiar eminence they still retain, seems to have been the reign of Charles the First, when “by the noble exertions of Lord Scudamore of Hon Lacey,” and other gentlemen, Herefordshire has become in a manner “one entire orchard.”†

Plantations are now found in every aspect, and on soil of every quality, and under every culture. The most approved site is that, which is open to the south-east, and sheltered in other points, but particularly in the opposite direction. For, although Virgil and the other Roman poets celebrate the west wind as the most genial in Italy, as observed in the first chapter of this survey, and although Philips in his provincial poem on Cider recommends the same aspect, it is an unquestionable fact, that the westerly winds, and consequently a westerly exposure, are particularly unfavourable to the fruit trees of Herefordshire; they are more cold, as blowing over a considerable tract of the Welsh mountains, which are often covered with snow, even late in the spring; and they are more unkind, because from that point, proceeds a much more than equal proportion of those fogs and blue mists, which Dr. Beale termed “the disgusts of the Black-mountain.” This leads to what is commonly termed *blight*, the theory of which appears to be imperfectly understood. The general idea, that insects or their eggs are brought on the trees by the winds, is very erroneous. Mr. A.

* Evelyn's *Pomona*, fol. London, 1679. † Ibid.

Knight, whose abilities as a naturalist are well known, and whose valuable assistance on this occasion is acknowledged with equal pride and gratitude, is of opinion, that they are deposited by the different species of the parent insects in the winged state, partly in the spring, and partly in the preceding summer, on those trees where they afterwards commit their depredations. Others suppose, that the appearance of insects on plants and trees, is the effect and not the cause of blight, and that this malady is occasioned by sudden changes of the atmosphere from heat to cold, by which the tender organs of vegetation are injured, the rising sap checked and inspissated, and both a nidus and food, created for various kinds of insects. *

Of what are termed blights, the honey-dew is ejected by the *aphis*; the mildew is a species of fungus; and there is sometimes found on the apple tree another species, if not more, of the same genus, differing from the mildew in colour, being of a dark brown colour, and possibly one sort of the *rubigo* of Virgil, to avert which, the Romans celebrated "*rubigalia festa*" in the kalends of May. No effectual means, however, have yet been discovered to prevent their bad effects.

The soil best adapted to most kind of apples, is a deep and rich loam, when under the culture of the plough; on this, the trees grow with the greatest luxuriance, and produce the richest fruit. Some trees, however, the Stire and Golden-pippins in particular, form exceptions to this general rule, and flourish most in a hot and shallow soil on a lime or sand stone. The best sort of pear trees also prefer the rich loam, but inferior kinds will even flourish, where the soil will scarcely produce herbage.

The apple trees are divided into *old* and *new* sorts;

* Monthly Reviewers, 1802.

each class comprises some called *kernel-fruits*, namely, the fruit growing on its native roots, as a distinction from those produced by the operation of grafting.

The old sorts are the more valuable, and are those which have been long introduced, such as the Stire; Golden-pippin; Hagloe-crab; several varieties of the Harvey; the Brandy-apple; Red-streak; Woodcock; Moyle; Gennet-moyle; red, white, and yellow Musks; Pauson; Fox-whelp; Loan and Old-pearmain; Dymock-red; Ten-commandments; and others. Some of these names are descriptive of the fruit, and others are derived from the place where they have been first found, or found in most abundance. The modern varieties derive their appellations from such various and capricious causes, that a correct list cannot be composed; in several instances the same fruit bears a different name even in the same parish. A regular and scientific classification of the whole would be a valuable acquisition to our rural economics; and there are at this time persons of opulence and public spirit fully adequate to such an undertaking.

The pears held in most estimation are, the Squash, so called from the tenderness of its pulp; the Old-field, from having grown as a seedling in a field of that name; the Huff-cap, from the quantity of fixed air contained in its liquor; the Bar-land, from fields in the parish of Bosbury called the Bar-lands, which were anciently held under the tenure of conveying the provisions of the lord; or Bare-lands, from their deficiency of produce at some particular period; the Sack-pear, from its richness; and the Red-pear, from its colour.—Of more common sorts, the Long-land is the most valuable, and for the general use of the farmer, perhaps the best of any.

It has been the fate of most improvements in nature

or in art, to have been patronised at one time and neglected at another, from causes and circumstances wholly unconnected with their intrinsic merits. Thus orcharding, (if the frequent use of this expression be allowable,) from the time of Henry the Eighth to that of Charles the First, appears to have engaged great attention; many treatises were published on the subject, and the practice was proportionably extended and improved.

The civil dissensions, which closed the unfortunate reign of Charles, could not fail to cramp the efforts of genius, and to suspend the operations of industry; and the public mind, like that of an individual, does not soon return even to a favourite subject, from which it has once been diverted or driven.

Before the calamities of the period alluded to, orcharding seems to have been brought to a very considerable degree of perfection; and even the ordinary means of preservation appear to have been neglected afterwards. If these conjectures should be admitted, (and they are offered merely as such,) they account, in some degree, for the decay of the old and most valuable fruits in Herefordshire, which is so generally acknowledged and lamented. Their renovation, or the introduction of others equally good, cannot be too strongly urged, and the public spirit of the present age has not been indifferent on the occasion; more endeavours have perhaps been directed towards this object within the last twenty years, than during a century preceding.

Grafting, as most expeditious, has been most frequently attempted; but it is presumed, that no mode of grafting, hitherto practised, has been found adequate to the purpose. The shoots, being unavoidably taken from old trees, flourish during a few years from the vigour of the crab-stock, then canker, and relapse into

all the infirmities of the parent tree. On this principle, the renovation of the old fruits appears impracticable ; by the general laws of nature, each animated being, lives to propagate its species, and after a time resigns its place to a successor. Mr. Knight observes, that the branch, from which a graft is taken, evidently partakes of the life of the tree to which it belongs ; and that it is equally evident, that, when part of a tree is detached, no new life is communicated, whether it be used as a graft, or placed to emit roots as a cutting : thus a tree, raised from a cutting, soon produces fruit in every respect similar to that of the tree from which it was taken. Mr. Knight also remarks, that the habits of seedling trees are very essentially different, that their leaves are small and thin, and that the general habit changes gradually, assuming annually a more cultivated character ; that, if a graft be taken from a seedling tree of one or two years old, it will retain the character, and undergo the same annual change as the seedling tree, whatever be the age of the stock into which it is inserted, and that it will remain unproductive of fruit or blossom, until the seedling tree has acquired its proper age and maturity.

Hence Mr. Knight infers, as before mentioned, that the cutting must partake of the life, and consequently of all the habits of the original tree. In support of this theory, he states, that a seedling walnut, grafted with a part of the bearing branch of an old tree, produced blossoms at three years old ; that the Spanish chestnut, under a similar process, blossomed in the year after it was grafted ; and that an annual scion of a mulberry tree thus grafted, bore a plentiful crop of fruit, (considering its size) in the third year after, and has continued to bear every year since. The grafts in these cases, Mr. Knight remarks, must have carried the

mature habits of the parent tree with them; and, if they retain these habits, it may fairly be inferred, that they retain also the same progressive tendency to decay. In short, a tree, like an animal, has *its infancy, its flowery spring, its summer's ardent strength, its sober autumn, fading into age, and its pale concluding winter.*"*

The opinion of the best informed planters is, that the seeds of the old fruits should be sown, and the most strong and healthy plants selected for cultivation and a supply of grafts.

This experiment has been adopted on a large scale by several planters, has hitherto promised the fullest success, and has further the sanction of that period, in which orcharding received particular attention. †

A treatise on this subject was published by Wm. Lawson, a north countryman, in the year 1626, and he states, that "the best way to plant an orchard is to turn the ground with a spade in February, and to set from February to May some kernels of the best and soundest apples and pears a finger deep and at a foot distance, and to leave the likeliest plants only in the natural place, removing the others as time and occasion shall require."

Lord Scudamore also fully understood the nature and value of this practice. After the assassination of his friend the Duke of Buckingham in the year 1628, he retired to Hom Lacy, and amidst other useful and honourable employments of a country life, he paid great attention to the culture of fruit trees, and particularly to that of the Red-streak, which he seems to have introduced into a general notice and esteem. As

* Mr. Knight's Treatise.

† One of the annual premiums given by the Agricultural Society of Herefordshire is, "for the best new varieties of the apple raised from seed," and several new varieties of excellent qualities have thus been introduced.

late also as the year 1654, a treatise called "The countryman's recreation, or the art of planting, grafting, &c." remarks, that "although the pippins be sown of the pomes of pears and good apples, yet we shall find, that some of them do love the tree whereof they came; and those be right, which have a smooth bark, and are as fair as those which be grafted." These instances, it is presumed, are sufficient to shew, that, at the period alluded to, it was well known, that good fruits might be raised by sowing the kernels of good apples, and selecting those plants which, in the absence of thorns, and in the general appearance of their leaves and bark, bore the greatest resemblance to the cultivated variety of the parent tree; whilst those, which approached the native crab, were to be carefully rejected. Yet Evelyn in the appendix to his *Sylva*, published several years afterwards, proves that the practice was hardly known here in his time. He writes, "nothing is more facile than to raise new kinds of apples *in infinitum* from kernels; yet in that apple county, (Hereford) so much addicted to orchards, we could never encounter more than two or three persons, that did believe it." This method, however, is now becoming more and more general; several thousand grafts thus raised are yearly distributed by the agricultural society, and are sought for with the utmost avidity. The most experienced planters consider it as the best, if not the only, expedient to preserve our provincial celebrity; and nothing surely can be more unphilosophical than to suppose, that a piece of an old dying tree can ever form a healthy and vigorous one. *

Mr. Knight has now many seedling apple trees produced between the Siberian crab and our richest apples. The vigour of most of them is astonishing, and as they

* Mr. Knight's Treatise.

blossom as early as the pear trees, Mr. K. is convinced, that they will be found of great value, particularly in high situations, where the Siberian very rarely fails to produce a good crop of fruit. An orchard is generally raised with most success, and at least expense, in a hop-yard, the ground under this culture being always well tilled and manured, as well as fenced against every kind of enemy.

The rows should extend from north to south, as in that direction, each part of every tree will receive the most equal portions of light and heat. The distance between each row, as well as the space between each tree, should depend on the situation and soil. When the former is high and exposed, the trees should be closely planted to afford each other protection ; and when the latter is poor and shallow, their growth will in course be less luxuriant, and they will consequently require less room. But in low and sheltered situations, and in deep and rich soils, wider intervals should be allowed. In the former instances, twelve yards between each row, and six between each tree, are sufficient ; in the latter, twenty-four yards between each row, and eight between each tree, will not be too much. Pruning is not in general use ; the most approved method, is that of rendering thin and pervious to the light, the points of the external branches, so that the internal branches of the tree may not be wholly shaded by the external parts. Large branches should rarely or never be amputated.— The instrument generally used for the purpose of pruning, is a strong flat chisel fixed to a handle six feet or more in length, having a sharp edge on one of its sides, and a hook on the other. The colours of good cider fruits are red and yellow ; the colour to be avoided, is green, as affording a liquor of the harshest, and generally of the poorest quality. The pulp should be

yellow, and the taste rich and somewhat astringent. Apples of a small size are always, if equal in quality, to be preferred to those of a larger, in order that the rind and kernel, which contain the flavour of the liquor, may bear the greatest proportion to the pulp, which affords the weakest and the most watery juice.

This is no new idea, for Batty Langley, who published his *Pomona in folio* in the year 1727, observed in that work, "the smaller the apple, in reason the better the fruit, is a constant rule amongst us." This was on the subject of Devonshire fruits; but had no such opinion been given, the fact has been fully ascertained by William Symonds, Esq. M. D. of Hereford, a gentleman well versed in every thing relating to planting, orcharding, and the manufacturing of cider. A few years ago, he made one hogshead entirely from the rinds and cores of apples, and another from the pulps of the same fruit. The former was of most unusual strength and highly flavoured; the latter was watery, and possessed not one recommendation.

The merit of cider will always essentially depend on the proper mixture, or rather on the proper separation of the fruits. Those, whose rind and pulp are tinged with green or red, without any mixture of yellow, should be carefully drawn from the best collection, which should comprise those only which are yellow, or yellow intermixed with red. Fruit of the latter description only, are capable of making the finest ciders, and they should remain on the trees, until they are ripe enough to fall without being much shaken. It is advisable that every sort should be collected separately, and kept till they become perfectly mellow. For this purpose, it is the common practice to place the fruit in several heaps, about a foot in thickness, and fully exposed to the sun, air, or rain, being never covered

except in very severe frosts. Each kind should also be ground separately, or at all events mixed with such only as become ripe at the same time: but it is from the former practice, as observed particularly by Mr. Appesley of Withington and many other manufacturers, that fine cider of different flavours and degrees of strength, are best obtained from the same orchard, the liquors being mixed after they are made.

The practice, however, of grinding together different varieties of fruits equally ripe, is found eligible in all common cases. For it is less difficult to find the requisite quantities of richness, astringency, and flavour, in three varieties of fruit than in one; and hence ciders composed of the juices of mixed fruits generally succeed under common management, with greater certainty than those made with one kind. In grinding, the fruit should be reduced as nearly as possible to a uniform consistence; so that the rinds and kernels shall scarcely be discernible from the general mass; it should be ground slowly, with the free access of air. In the cider mill of this county, a circular stone in the form of a solid broad wheel, and about three feet and a half in diameter, one foot wide, and weighing 12 *cwt.* is supported on its edge, and drawn by a horse in a circular trough of stone, about ten feet in diameter, and about the depth of eight inches. Into this trough the apples are gradually introduced; and a mill of the above dimensions is equal to the proper grinding of one hoghead of cider in a day. The mill resembles those used in grinding bark, and also those adapted to the purposes of manufacturing gunpowder: in favourable situations, perhaps, they might be so constructed as to save the labour of the horse, by the use of a stream of water, as in corn mills; but it is not known, that this experiment has yet been made, or the suggestion offered

before. All the modes previously in use, such as pounding apples in wooden mortars, cracking them between two cylinders armed with spikes; &c. &c. are very imperfect indeed, compared with the merits of the mill now in use. From this mill, the county of Hereford has probably derived no small portion of its merited fame; and without it, no other county can apply their apples to making cider with the greatest advantage.—The quantity of apples, necessary to fill the provincial hogshead of one hundred and ten gallons, varies from twenty-four to thirty bushels; a smaller quantity of pears will fill a vessel of the same size, or even of apples, if used immediately from the tree.

When the fruit has been thoroughly ground, the reduced pulp should remain twenty-four hours in an open tub, before it is taken to the press; a large quantity of juice will then pass through the hair cloths used in pressing, and this is to be deposited in casks not quite filled, and situated in the open air. The first fermentation, to which the liquor is subject, is the vinous; the second, if not checked or prevented, is the acetous; the third, the putrefactive. The great object therefore, of the cider maker, is to watch the first operation, during which some of the impurities are floated on the surface, but most of them are precipitated to the bottom; the fine liquor is then carefully drawn off into another hogshead, and the lees afterwards filtrated in the manner of jelly through linen bags, by which the liquor remaining in them, is brought to an equal degree of fineness, and is added to the other.

All further fermentation is to be avoided; but on any appearance of it, small quantities are drawn off into open tubs, and returned to the main body in a state of flatness, having been exposed during twenty-fours to the air. The mode, however, has sometimes produced

acidity in the liquor. The first fermentation, if the weather be cool or frosty, will generally be completed within a few days; and, if the first opportunity of drawing it from the lees be neglected, a change of weather or other circumstances may render it again impure in a very short time, and render the fining much more tedious and difficult than at first. The brightness of the liquor is, therefore, the best criterion to decide the proper period of racking.

The casks should want four or five gallons to complete their fullness, and having remained in the open air until the end of March, the liquor should then be racked off into clear casks in the cellar, the casks be completely filled, and the bungs be fixed (which, until this time, have only been placed loosely in their situations) with as much firmness as will not endanger the safety of the cask; and common cider will possess more strength when the ready escape of fixed air has been prevented. Chaptal, an eminent French chemist, has made the same remarks on wines.

Mr. Knight has endeavoured to ascertain the specific gravity of the juice of different apples and pears by the hydrometer; and he is of opinion, that the strength of the cider, to be produced by any of the new fruits, may be thus calculated with considerable accuracy. The failure of a crop of apples, during the last two years, has been unfavourable to the experiment, but Mr. K. has already discovered, that the juice of the Stire far outweighs that of our ordinary apples; and that the specific gravity of the juice of a ripe and perfect Longland pear is 1053, and that of the Holmer pear 1060, in the same soil. Ciders manufactured from good fruits, according to the regulations above mentioned, will retain a considerable portion of their sweetness to the end of three or four years, when it is gradually lost without

any diminution of its strength. At two years old, it is in the best state to bottle, after which, it will become brisk and sparkling in the following summer; and, if it possess much richness, it will remain with little perceptible change during twenty or thirty years, or as long as the cork duly performs its office. It will readily be supposed, that all these precautions are not attended to, in making cider for the common use of the farm-house. The flavour of the liquor is then a secondary consideration, and the object is to obtain a large quantity at a small expense. In this case, the apples are usually ground as soon as they become moderately ripe, and the juice is racked off once, or as soon as it becomes tolerably clear; or it is more frequently conveyed at once from the press to the cellar: a violent fermentation then commences, and continues until nearly the whole of the saccharine part is decomposed, and the liquor rendered harsh, and unpalatable to those unaccustomed to drink it. The casks are filled up, and stopped early in the succeeding spring (sometimes sooner), and no further attention is given; but even in this state, and under this management, it is often preferred by the farmers and peasants to rich and mellow liquor. A still inferior kind of cider is made by re-grinding the reduced pulp after pressing with a small quantity of water.

The residue of three hogsheads, thus yields about one of the inferior kind, which may be kept until the next autumn, but usually supplies the place of cider for the common purposes of the farm-house until harvest, when the superior kind is required and allowed. The pulp may still be converted into a good manure by mixing it with quick lime, and turning it over two or three times in the succeeding summer. The culture of the pear tree and the management of perry differ so little from those

of the apple and its produce, that the same general rules are applicable to both.

The pear tree however is most successfully propagated on stocks of its own species, and lives much longer than the apple. Like the latter, it grows with the greatest luxuriance in strong and deep soils, and in these the finest liquor is produced from it ; but it will flourish in every variety of soil, where it is not incommoded with water, and might probably be cultivated in almost every part of England, with nearly as much success as in this county, if the fruit be ground in a similar mill, and equal attention paid in the process of manufacture. In planting pear-trees, a wider interval should be allowed between them, than is necessary to the apple-trees. In the most closely-planted orchards, the rows should not be less than eighteen yards distant, nor the trees nearer than eight or nine yards from each other. When the ground is to remain under tillage, it is better to allow even twenty-five or thirty yards between the rows. As in cider, the fruit which is ground together, should be as uniformly ripe as possible ; and few kinds of pears are found to improve by being kept after they have fallen from the trees. Perry will not always become fine as readily as cider : an ounce and an half or two ounces of isinglass dissolved in the liquor are then applied in the usual manner, to a cask of one hundred and ten gallons.

The pear, although in general producing an inferior liquor, possesses many advantages for general culture, when compared with the apple. It will flourish in a greater variety of soils, is more productive, and being incapable (in those sorts which are proper for perry) to be eaten or applied to any common culinary purpose, it is little subject to be stolen even in situations where fruit does not abound. As an ornamental tree it

possesses sufficient merit to entitle it to a place where ornament is the principal object : its form is often picturesque, and its blossoms in the spring, and its fruit in autumn, are always beautiful. Every tree, when nearly full grown, will afford in moderately good ground an annual produce of twenty gallons of liquor (taking many years together), even at the lowest calculation. Many single trees in Herefordshire have produced a hogshead in one season ; and an extraordinary tree growing on the glebe land of the parish of Hom-Lacey, has more than once filled fifteen hogsheads in the same year : when the branches of this tree in its original state became long and heavy, their extreme ends successively fell to the ground, and taking fresh root at the several points where they touched it, each branch became as a new tree, and in its turn produced others in the same way. Nearly half an acre of land remains thus covered at the present time. Some of the branches have fallen over the hedge into an adjacent meadow, and little difficulty would be found in extending its progress. An acre of land is capable of containing thirty pear-trees of usual dimensions, which taken from new varieties of fruit, would probably continue in a productive state beyond the conclusion of a second century. The produce of an acre planted with apple-trees, will generally be found nearly one third less than the same quantity of ground planted with pear trees would afford, with the exception of the Holmer pear and the Oldfield; but the apple-tree begins to bear at an earlier age, and cider will ever be justly preferred to the juice of the pear. As an object of sight, the pear-tree has every advantage over its rival ; but Mr. A. Knight is of opinion, that under the system now practising, to procure new varieties, the apple-tree may in some degree at least acquire the recommendation of ornament as well

as use; those crossed with the Siberian crab promise to be of this description. The value of the ground as a pasture in closely planted orchards, will necessarily be much reduced; but the loss of herbage will in few instances amount to more than one-tenth of the value of the fruit.

The grass produced in an orchard comes very early in the spring, when it is peculiarly valuable to the farmer. Under judicious management it is never suffered to grow long or coarse, and an orchard in this condition will be found to support a very considerable quantity of stock.

It also not unfrequently happens, that the same ground which produces but a very small portion of herbage, will make an excellent orchard. Mr. Knight has one of this kind, which during the last thirty years has afforded a produce of nearly four hundred gallons per acre. That gentleman is decidedly of opinion, that if the trees were wholly removed, the same acre would not support two small sheep throughout the year without difficulty; and the trees by no means consist of the most productive varieties * The soil is a stiff and deep clay, somewhat indurated; and the field would be less worth twelve shillings an acre as a pasture, than it is worth three pounds an acre, as an orchard. Great Britain probably contains many hundred thousand acres capable of being as much improved by planting as this ground has been, and that improvement might be made at an extremely small expense, and within a short period of time.

The experiment might easily be made in any other county with the apple on a single acre of ground, and within seven or eight years. If the stocks were to be raised from the seeds of the crab, and afterwards planted

* Mr. Knight's Treatise.

in the nursery in rows, six feet distant from each other, and with intervals of one yard between each plant in the row; an acre would contain two thousand four hundred and twenty trees; and if these were grafted with varieties properly selected, at three years old, a quantity of apples would be afforded by those grafts in the fourth or fifth year, whilst in the nursery, sufficient to ascertain the merits of the soil; and the fruit might be reduced without the aid of a mill, to prove, in some degree, the merits of the cider. An opinion very generally prevails, that fine cider and perry cannot be produced except in particular soils, but this is certainly to be ranked amongst the vulgar errors. The planters of Herefordshire in the latter end of the seventeenth century, supposed that good cider would only be obtained from light and sandy soils, such as are here termed rye-lands; and Philips directs the farmer to

“———Look where full-eared sheaves of rye

“Grow wavy on the tilth: that soil

“Select for apples.”

The present opinion, as already mentioned, is decidedly in favour of a deep and rich clayey loam, except for a few particular sorts. But every soil in which the fruit attains a perfect state of maturity, is capable of producing cider and perry, in a greater or less degree of perfection.

The apple and pear are found quite as highly flavoured and as perfect in many other counties as in this; and Mr. Knight is of opinion, that if the planter were at liberty to choose his soil, a loam of moderate depth, with a sub-soil of chalk, would be found equal to any, which the counties now celebrated for orchards, could supply.

If the apple and pear-trees were thinly dispersed over the meadows and pastures of every district in which

they would succeed, the injury done to the herbage would be extremely small, and such trees might perhaps be made to supply the whole population of the county employed in agriculture, with as wholesome and palatable a beverage as they now possess ; and in fruitful years a large quantity would be afforded for the use of the towns. The number of acres now employed in raising hops, and poles to support them, might be greatly reduced ; and this alone would prove an immense advantage to agriculture. Hops at present occupy the best ground the farmer has to give them ; they take his best manure ; they are too often the principal objects of his attention ; and whilst their culture injures the crops of corn in every district where they abound, it may be questioned whether the produce of a thousand acres, annually afford nutriment sufficient to support a single human being. By an extended culture of the apple and pear, many millions of bushels of barley, now converted into malt, might annually be saved, and applied to better purposes.

The ground now employed in its culture might be made to produce wheat, or other articles immediately necessary to society ; and that the juice of the apple and pear will afford a liquor as wholesome as any which can be obtained from malt, is sufficiently evinced by the general appearance of the natives of this and other cider counties.*

* The reader, who is desirous of more detailed information on these subjects will find them fully and scientifically discussed in Mr. Knight's Treatise, which has been repeatedly alluded to, and by the obliging permission of the author, as freely adopted in this part of the Survey.

CHAPTER VIII.

WOODS AND PLANTATIONS.

ALMOST every part of Herefordshire abounds in woods, and old plantations of timber, or rather perhaps with fine trees of oak and elm, for which the proprietors are more indebted to nature, than to art. At a distant period a large proportion of the province must have been altogether woodland and coppice: the clearing naturally began in the most fertile spots, particularly near streams and rivers. Reference is made to the "assart" or cleared lands near Aconbury, in grants to a religious house there, in the fourteenth century. But even at present, an eminence one mile east from the church and village of Mordiford, affords at once striking specimens of Herefordshire in its original state, and in that to which it has been brought by cultivation and refinement. Looking from this point towards the east, an immense expanse of woodland is seen, as far as the eye can reach, with a white cottage and a cultivated acre occasionally intervening. Deep and winding roads intersect the whole with a narrow track, and a bleak and barren common which appears "far from the busy haunts of man," completes the cheerless scene.

The admirer of nature unadorned, will contemplate this prospect with pleasure; and it may remind him of

many parts in America; but the contrast afforded from the same spot by reversing his position, will surely excite more agreeable sensations.

Towards the west, the most fertile meadows are enlivened by cattle grazing on the banks of rivers occasionally seen in beautiful reaches and in rocky channels: towards the south-west is the extensive park and residence of the Duke of Norfolk; towards the north-west, the elegant mansion of Longworth, and between them, the beautiful grove of Rotherwas. Still further are seen the cathedral and spires of the provincial metropolis, backed at a considerable distance by the mountains of Wales.—The northern side of the county has greater abundance of fine oak than the southern parts. The forests of Mocktree and Prestwood are instances of this. Brampton-Bryan, and other estates of the Earl of Oxford, are particularly distinguished by the size and quality of the timber they furnish, for the navy and other uses. The park and demesnes of Croft Castle are also much and deservedly admired in this respect; and Netherwood, the birth-place and occasional retreat of the unfortunate Earl of Essex, can boast of some of the finest trees in the county. The growth of oak is however by no means confined to any one part of Herefordshire: the parks of Stoke and Moccas in particular, with many other places, have very large and valuable supplies of timber for every purpose. Even in the red and comparatively barren soils, the oak flourishes with astonishing luxuriance. Part of Mr. Knight's estate of Wormsley Grange, which was rejected by a tenant when offered to him at 8s. the clear acre, tithe-free, produces oaks of very rapid growth: a strong red clay forms both the surface and sub-soil, and it apparently contains no calcareous matter, as it will not effervesce.

with acids in the slightest degree. This soil, if analysed, would probably yield nothing more than water, red oxide of iron, silex, and alumine ; and it seems difficult to ascertain, what can be the food of the oak in such a soil.

Young plantations, to insure a succession of this great national article, do not, it is apprehended, receive as much attention in Herefordshire as they deserve. Some hundred thousands of acorns have however been lately set in Acombury by the steward of Guy's Hospital : and whoever will examine the plantations of the Duke of Norfolk at Hom Lacey, will have in the quickness and luxuriance of their growth, the greatest possible encouragement to adopt their culture. Some of the most extensive coppices are situated in the parishes of Fownhope, Woolhope, and Little Birch ; and in the vicinity of Ledbury. They consist principally of ash, oak, and willow, are generally cut down once in thirteen years, and bring at a public sale from 18*l.* to 35*l.* per wood-acre, the size of which bears a proportion to the statute acre as eight to five. In falling a coppice, a certain number of store trees are left as standards on every acre : and these would furnish an adequate supply of timber from the spot, but they are too often cut down at the second fallage, and replaced perpetually after, with younger stores. The ash is converted into hoops, for which the county itself has of course a large demand ; the oak and willow furnish poles for hops, and materials for laths ; whilst what are termed *black poles*, which are those of larger size, and confined to oak, are applied in rafters and other purposes in building. The *abele*, the *larch*, and other firs, might be introduced in the plantations of Herefordshire with great success and profit.

CHAPTER XI.

WASTE AND UNIMPROVED LANDS.

LANDS of this description form a very inconsiderable proportion of Herefordshire. The greatest extent is on the east side of the Hatterell or Black Mountains: and there, unfortunately, in the steepness of the hills, and the poverty of the soil, oppose serious obstacles to all improvement. Perhaps rabbit warrens and plantations of coppice-wood might be found the most practicable and least expensive means to enhance their value. Hay-wood forest, and other waste lands in the interior of the county have been cultivated within a recent period, with every success; and most others are gradually converting from their natural state to that which proves more productive and beneficial to society.

CHAPTER XII.

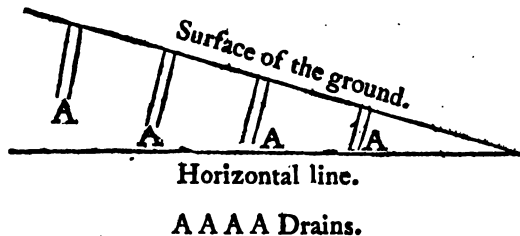
IMPROVEMENTS.

SECTION I.—DRAINING.

FEW counties are capable of receiving more benefits from the operation of draining, than that of Hereford. But the custom is too generally limited to the opulent land-owner. The expenses of every effectual mode of draining are very considerable ; and a tenant on a short lease has no encouragement to undertake it. Amongst the premiums offered by our agricultural society, one is “ for communicating a mode of underground draining superior to any now in common use : ” but although this was first made public in the year 1797, no candidate whatever has yet claimed the premium.

The method generally adopted in those parts where this practice prevails, is to dig narrow channels to a proper depth, and fill them with small or broken stones about twelve inches from the bottom, covering the top of the stones with the inverted turf, and closing the whole with a part of the soil dug out : the remainder is spread on the sides of the channel.—It is advisable that the drains be generally made at least three feet and six inches in depth, and that the stones should fill fifteen or eighteen inches from the bottom. Mr. Knight previously ascertains the most effectual mode of draining

strong soils, by boring holes to the depth of four, six, or even ten feet, with an instrument similar to that used in searching for coal, and on the principle of a carpenter's augre. If the soil extracted appears very wet, and the holes fill slowly, it is obvious that little advantage can be expected without numerous drains: if on the contrary, the holes fill rapidly, compared with the wetness of the soil, a proportionably less number of drains will have an equal effect. In some instances, layers of sand have been found at the depth of six, eight, or ten feet from the surface; a single drain will then have great power. Mr. Knight further recommends that the drains be taken *across* the descent of the ground, and at such distances, that the bottom of the upper drain should be from eighteen to twenty-four inches below the level of the next drain below.



The late Hon. Edward Foley drained a considerable extent of land at Stoke Edith, by means of a plough drawn by four or more horses, and having an iron cylinder pointed at the end, which was thus forced through the soil at a proper depth. This experiment appears to succeed on a clayey soil, but could not answer, it is presumed, in that, which is either sandy or abounding with stones. Even in the first instance there must be danger from the first treading of cattle and horses, particularly when drawing heavy loads over the channel

thus formed. Hollow bricks have been used with success in many situations ; and perhaps they will be found most durable, although it may be questioned, whether they will always be as effectual as the draining made by broken stones, as above-mentioned.

SECTION II.—PARING AND BURNING.

This process is by no means a modern discovery, but an old practice revived, and perhaps adopted with more spirit and success at the present, than at any other period. Virgil in his *Georgics* alludes to it in the plainest terms ;

“ Sæpe etiam steriles incendere proficit agros.”

The Marquis Turbilly made several experiments of this kind in Anjou. Amongst others, he set fire to the gorse, fern, &c. on his waste land, and tried to cultivate it afterwards by means of a common plough : he found the roots too stubborn to yield to this operation ; they also sprang again in their seasons, and materially injured his crop of corn. This was in the year 1740 ; in the following year he caused the gorse, &c. to be cut off close to the ground, and burnt in heaps. The whole surface was then dug by hand, the roots pulled up as they occurred, and afterwards stacked for drying. They were finally burnt on the ground, and the completest success attended the experiment. In Worcestershire, very large tracts of land recently inclosed between Worcester and Broadway, have been pared and burned to the great profit of their proprietors. The crops now produced on the ground thus managed, are heavy and luxuriant : and in them the owners of similar wastes in

the vicinity have ample inducement to submit their lands to the same operation, and the practice is accordingly extending itself with rapid strides, from its own intrinsic merits.

Many parts of Herefordshire are doubtless susceptible of great improvements from this measure: but it has hitherto been confined to a few persons only. A general knowledge of the following fact will perhaps induce others to afford it a fair trial.

About twelve years ago, an extensive tract of hilly ground, over-run with gorse and fern, was purchased by James Phillipps, Esq. with other lands in the parish of Dewchurch.

The value of such ground is not always known, but fortunately in this instance it is ascertained with the greatest precision; it being valued to him in the purchase as worth three shillings per acre of annual rent. Soon afterwards Mr. Phillipps engaged proper workmen from Gloucestershire, who cut the gorse in bundles at two shillings per hundred: they then pared and burnt the surface, and spread the ashes at twenty-five shillings per acre. It was then ploughed for wheat, and the produce was no less than twenty-six bushels per acre.

In the spring, it was properly prepared for turnips, and brought a very good crop. It was next sown with barley and seeds, and has from that time remained an excellent pasture, and any of the neighbours would gladly rent it at sixteen or even eighteen shillings per acre. In some parts this branch of agriculture is termed *denshiring*, and derived from the early introduction of this practice in the county of Devon.

This branch of husbandry is particularly adapted to damp and deep soils, covered with a peaty substance; because in these, vegetable mould abounds often to

excess ; and there are cases in which a tenacious clay may be rendered more loose and pliable, by subjecting it to the action of fire. But on the other hand Mr. K. contends, that much vegetable matter, composed of oil, charcoal, and volatile alkali, which might have formed the food of succeeding crops, is thus volatilized and dissipated ; and, as far as concerns the interest of the farmer, is totally annihilated. Mr. K. mentions an instance, which, it is conceived, has occurred but rarely : that gentleman occupied a small estate in this county, the whole of which, with the exception of one field, had been pared and burned ; and although the whole was frequently manured, no improvement from thence was perceptible on the burnt soil, after the second year ; whilst the unburnt field became permanently fertilized ; the soil of the whole was a light loam, and it was situated on a hill. On the other hand, Mr. Knight has burned the peaty turf of a black and boggy soil at Wormsley Grange, with complete success ; and knows the good effects of a different practice on more elevated land. About fifty years since, the hills on the Grange Farm were nearly covered with gorse, and were not then esteemed to be worth more than one shilling per acre yearly. The gorse was cut and used for fuel, and the soil was covered with a very heavy dressing of lime. Large crops were produced on it during many years, and it still remains very good land, when its elevation is considered. Mr. Knight supports his opinion, that elevated lands in general will be more permanently benefited in this way, than from burning, by stating, that quick lime acts in some degree similar to fire, but more slowly ; and that during the decomposition of vegetable bodies by its action, much of the matter which would have been totally dissipated by fire, is absorbed by the soil and roots of present and succeeding crops. The

objection, however, does not appear to apply so forcibly to lands laid down in pasture, (as before recommended after one or two crops), as to those which remain constantly under tillage, after ; and Mr. Knight admits, that the process of burning is almost invariably beneficial in its early stages.

SECTION III.—MANURING.

Of the several kinds of manure laid on lands in this county, that procured from the fold or farm-yard is used in the most considerable quantity.

Lime is next in request, the beneficial effects of which are fully felt and acknowledged, but it is conceived, that its chemical properties and modes of action are not yet thoroughly understood.

A skilful and experienced farmer of Herefordshire made the following observations in reply to queries submitted to him on this occasion. "In whatever way lime is applied, the succeeding crop or crops receive more benefit from a hot, than a cold summer.—Wheats, on fallows limed during the spring or summer previous to their sowing, seldom appear better than on unlimed lands under similar husbandry, until the weather becomes hot in May or June.

"Grain of all sorts on limed lands is later in getting ripe, than on those where no lime has been used.—When large quantities are applied, this effect is particularly discernable. Hence I infer, that lime has a tendency to make the land cool, perhaps by exciting or attracting more moisture ; and I never recollect to have seen a crop suffer from a dry hot summer, when the land had been previously well limed. On stiff soils I

prefer putting the lime on the fallows when it is hot, and the land somewhat wet, ploughing or harrowing it in as soon as possible.

“ On light soils, I think it is used with the greatest advantage on young grass in the spring, where it soon reaches the roots of the plants ; but, when placed on fallow land of this description, it appears to sink too deeply, to be beneficial to the crop on the surface. Lime should be exposed as little as possible to the sun, particularly when spread thinly over the ground for manure ; it seems to force the different particles of the earth into action, and I have no doubt, but that constant liming must be ever injurious to land under the plough, particularly if applied in large quantities.

“ Lime ought to be put on the land some days at least before the sowing takes place, otherwise in wheat crops, it will cause the ground to ferment and lie too closely round the seed during the winter ; or in barley crops, it will prevent the growing of many of the grains, if hot weather immediately succeed the sowing.”

Mr. Knight does not fully agree in every respect with these opinions. He conceives, that the sun cannot injure lime, and that one good effect has often resulted from the application of it fresh from the kiln ; for in that caustic state, by its rapid absorption of moisture, it will destroy couch grass instantly, if ploughed in, amongst its roots. Mr K. further remarks on this subject, that it will depend much on the quality of the lime, whether it be necessary or not to expose it on the surface, during some days before sowing. If it be found to contain much flint and sand, and probably, (when in mortar it sets readily under water,) some manganese, Mr. K. observes, that, it may be ploughed in hot, and immediately before the sowing, even in large

quantities without injury ; but in other lime, and particularly in that which contains a proportion of magnesia, more caution is indispensably necessary. Mr. K. agrees with the experienced farmer, that lime often repeated will render no service to an exhausted field, although it is very frequently so applied. Thus the landlord, who binds his tenant to a large consumption of lime, without stipulating for the use of other manures, resembles the man, who lets his horse to hire under a positive injunction, that the rider shall use whip and spurs, but takes no precautions to insure the equally essential requisite of corn and hay, without which the exertions of whip and spur must be utterly unavailing. In considering further the properties of lime, it may be advisable to advert distinctly to its effects, when applied to a clayey or a sandy soil ; in other words, to a stiff, or a loose soil. It must be obvious to all, who have made observations on the subject, that an extreme cohesion or tenacity in clays is the quality it possesses most unfriendly to agriculture. By this the necessary operations of the plough are impeded ; the due absorption of water on the surface is prevented ; and the powers of vegetation are materially checked. Calcareous substances of every kind afford the greatest improvement to land of this description, because they dissolve the tenacity complained of, and render it at once friable and mellow. In Cornwall, sea sand has been applied with great success, that is, that kind of sea sand, which contains a portion of shells pulverized by the continual washing of the sea.

Calcareous substances are supposed to comprise every thing, which burns into lime, and with which, acids effervesce, or rise in numerous bubbles. They are said to absorb the acid, because, when mixed with acid or sour liquors, they attract or suck up the acid quality, and leave the liquor mild, if not sweet ; of this description

are, marble, lime-stone, several kinds of free-stone, chalk, marl, shells, coral, ashes, &c.

The fertilizing qualities of calcareous earths appear to have been known at an early period, to the ancient nations of Europe, who are generally termed barbarous, for Varro observed, that the Transalpine Gauls "*agros stercorarent candida fossilia creta*;" but, as these materials are not always to be met with, common sands, and even small gritty gravel, have been recommended as substitutes. Columella states in general terms, that his relation carried sand on clay, and clay on sand with good success. Evelyn, Worlidge, Miller, and Bradley, also advise the application of sand and gravel to a clayey soil, but with some attention to their natural or adventitious qualities. But possibly these very respectable authors, and many practical farmers, may not have duly considered, whether such applications act positively as a manure; or whether they only assist the clay by keeping the pores open, and affording interstices somewhat similar to the vessels in the bodies of plants and animals, and by which, nutriment is conveyed to the parts requiring it. Perhaps even lime itself has more of this quality than of an actual manure, and it is very respectfully suggested, whether the national Board of Agriculture, amidst their great attention to the interests they superintend, might not deem *a philosophical and chemical account of the operation and effect of lime on different soils*, to be a proper subject for one of their public premiums. The benefits, which accrue to sandy soils from the use of lime, are as well known, as those experienced on clays; but the modes of operation, without which it cannot be properly regulated and proportioned, are equally mysterious as in the other instance. When lime is recommended as an application to correct and remove the tenacity of clay, it seems strange to urge its

adoption on sand, in order to create and promote its adhesion. Opposite as these properties seem at first view, who has not witnessed the different effects produced in a chemical process, by omitting one ingredient, and substituting another?

The admixture of colours affords another example of this kind; and if it be enquired, why the loosest sand is chosen in the composition of mortar? the answer must be, that it forms the firmest cement.

But, without relying on reasoning only, a practical proof of the use of lime on light soils is supplied by the district of Irchenfield in this county. This district, which, as before noticed, was reported by Dr. Beale "to refuse wheat, peas, and vetches," and to be adapted only to the culture of "rye, hemp, flax, turnips, and parsnips," has been so essentially improved by the use of lime as a manure, that it not only produces plentiful crops of barley, peas, &c. but is also successfully applied to the growth of wheat and other grain.—Whether the soil be composed of clay, or sand, it must be the object of the farmer to bring it to a consistence favourable to vegetation. If lime cannot be procured for this purpose, a proportion of the strongest marl or clay will materially contribute to the improvement of sandy soils, and a proportion of sand, will assist those which are clayey.

Of other manures used in Herefordshire, the sweeping of towns is very valuable in those situations, which by their proximity will admit of its use. Common ashes and those from the soap-boiler's furnace, are applied to pastures with great effect. Night-soil is also mixed with earth and other ingredients, and forms a very forcing compost. The shovelings of roads, scouring of ditches, mud from ponds, and other resources of the active farmer, are occasionally resorted to, but not so often as they might be with profit.

SECTION IV.—WEEDING.

Weeding is very rarely practised in Herefordshire, except the hoeing of thistles on wheat crops in the month of May be considered as an operation of this kind. Even docks are not generally rooted up, although it is easily effected after rains with the assistance of a proper instrument, having two strong tines of iron, which gradually unite at the top, and are fixed to a handle like a spade, with a projection behind to increase the purchase. But the good effects of weeding can require only a moment's consideration, to induce every intelligent farmer to adopt it, in the most extensive manner. The general appearance of land thus attended to, is highly agreeable; but the positive injury of weeds in robbing the crops of their proper nutriment, in covering land, which ought to be better occupied, and in cramping the growth of every thing within their influence, are serious obstacles, and will certainly repay the trouble of removing.

SECTION V.—WATERING.

The fertilization of Egypt by the annual overflowing of the Nile possibly first suggested the experiment of irrigation in other places. Virgil seems to have understood the beneficial effects of the practice, when he observes, that

“ *Humida majores herbas alit;* ”

and again, he expresses himself more fully in these words

" Huc summis liquuntur rupibus amnes,

" Felicemque trahunt limum."

In Herefordshire, this mode was introduced nearly two hundred years ago, and still it is far from general.

Rowland Vaughan, Esq. of Newcourt, wrote an essay on this subject, and it was published in the year 1610, with the following title: "most approved and long experienced water-works: containing the manner of summer and winter drowning of meadow and pasture by the advantage of the least river, brooke, fount, or water prill adjacent; thereby to make those grounds (especially if they be drye) more fertile ten for one.— As also a demonstration of a project for the great benefit of the commonwealth generally, but of Herefordshire especially." It was dedicated to William, Earl of Pembroke, and was prefaced by several panegyrics written by John Davis, the celebrated penman of Hereford, John Strangewaye, Robert Corbett, Henry Fletcher, Richard Harries, Sylvanus Davies, Thomas Rant, Oliver Maynson, and John Hoskins. The author thus accounts for his undertaking:

" In the month of March I happened to find a mole or wont's nest raised on the brim of a brook in my meade, like a great hillock; and from it there issued a little streame of water, (drawn by the working of the mole) down a shelving ground, one pace broad, and some twenty in length. The running of this little streame did at that time wonderfully content me, seeing it pleasing greene, and that other land on both sides was full of moss, and hide-bound for want of water.— This was the first cause I undertook the drowning of grounds.

" Now to proceed to the execution of my worke: being perswaded of the excellency of the water, I examined how many foote fall the brooke yielded from my

mill to the uppermost part of my grounds, being in length a measured mile. There laye of meadow land thirty acres overworn with age, and heavily laden with moss, cowslips, and much other imperfect grass, betwixt my mill stream and the maine river, which (with two shillings cost) my grandfather and his grandsire, with the rest, might have drowned at their pleasures; but from the beginning never any thing was done, that either tradition or record could witness, or any other testimonie.

“ Having viewed the convenientest place, which the uppermost part of my ground would afforde for placing a commanding weare or sluice, I espied divers water falls on my neighbour's grounds higher than mine by seven or eight foote: which gave me greater advantage of drowning more ground, than I was of mine own power able to do.

“ I acquainted them with my purpose; the one being a gentleman of worth and good nature, gave me leave to plant the one end of my weare on his side the river: the other, my tenant, being very aged and simple, by no perswasion I could use, would yield his consent, alledging it would marre his grounds, yea, sometimes his apple trees; and men told him, water would raise the rush, and kill his cowslips, which was the chiefest flower his daughters had to tricke the May-pole withal. All which, with silence, I past over for a time, knowing his simplicity to exceed his discretion. Yet in the end I re-enforced my perswasions, and tolde him, that next unto the King I was to be obeyed in matters reasonable, and that it became him not to provoke his landlord, nor to stand at the staff's end with his commander. Yet these bugg words would not move him.

“ Then gave I a fresh charge, and to draw him on with a baite, which he would soon bite at, told him, I

had a meadow plot in his neighborhood worth ten pound, which I would part with on reasonable terms; but before I could make him believe he was a foole, he got the fee-simple thereof.

“ After I had wrought thus farre, I caused my servant, a joyner, to make a levell to discover what quantity of ground I might obtaine from the entry of the water; allowing his doubling course, compassing hills to carry it plym or even, which fell out to be some three hundred acres.

“ After I had plymmed it upon a true levell, I be-tooke myself to the favour of my tenants, friends, and neighbours, in running my maine trench, which I call my trench-royal. I call it so, because I have within the contents of my worke, counter-trenches, defending-trenches, topping-trenches, winter and summer-trenches, double and treble-trenches, a traversing-trench with a point, and an everlasting-trench, with other troublesome trenches, which in a map I will more lively expresse. When the inhabitants of the country, wherein I inhabit, (namely the Golden Valley) saw I had begun some part of my worke, they summoned a consultation against me and my man John, the leveller, saying our wittes were in our hands, not in our heads; so we both, for three or four years lay levell to the whole country's censure for such engineers as their forefathers heard not of, nor they well able to endure without mer-ryments.

“ In the running and casting of my trench-royal, though it were levelled from the beginning to the end, upon the face of the ground, yet in the bottom I did likewise levell it to avoyde error.

“ For the breadth and depth, my proportion is ten foote broad, and four foote deep; unless in the beginning, to fetch the water to my drowning grounds, I ran

it some half mile eight foote deep, and in some places sixteen foote broad. All the rest of the course for two miles and an half in length, according to my former proportion. When my worke began in the eye of the country to carry a shew of profit, it pleased many out of their courtesie to give it commendations, and to applaud the invention."

The author then makes a considerable digression, to account for a delay in his proceedings, which was occasioned by processes issued against him from the courts of Star-chamber, Chancery, and Wardes, to compel him to deliver his niece and ward into their custody.

"These courts," he observes, "bred more white-haires in my head in one year than all my wet-shod water-works did in sixteen. So leaving my wanton ward in London, in the custody of a precisian or puritan taylor, who would not endure to heare one of his journeymen sweare by the cross of his shears ; so full was he of sanctity in deceit. But the first news I heard was, that he had married my Welsh niece to his Englis nephew ; and at my return, I was driven to take his word, that he was neither privy to the contract, nor the marriage."

Mr. Vaughan next gives the following directions for carrying this plan into effect. "Compare the quantity of ground with the quantity of water you can draw unto it, and, if you find water enough to answer your desire, in the begining of your ground, plant your weare or sluice, in height levell with the banks, or exceeding it one foote, or thereabouts, across the river or brook, and carry your trench-royal, as far as your ground extends plym or levell, that from the mouth of your weare or sluice to the end of the ditch or trench, your water may flow back again over your sluice into the water or

brooke. In so doing you have a full command, forward and backward without any descent, to drown at your pleasure, although your trench-royal rise in the end twenty or forty foot from the mouth of the sluice.— Having prepared your drowning course, be very careful that all the ground subject to the same, whether meadow, pasture, or arable, be as plain as any garden-plotte, and without furrows. Then follows your attendance in flood-times: see that you suffer not your flood water by negligence to pass away into the brooke, river, and sea, but by your sluice command it to your grounds, and continue it playing thereon so long as it appears muddy. Finding the substance decaying from a fat flood unto a clear water, take up your sluice or flood-gates, and suffer the clear water to have his course unto the maine brook or river again, until new or fresh floods appear; and still as it rises muddy, employ it on your grounds during the winter season. In the begining of March clear your ground of cold water, and keep it as dry as a child under the hands of a dainty nurse; observing generally, that sandy ground will endure ten times more water than the clay. A day or two before you mow, if sufficient showers have not qualified the drought of your ground, let down your sluice into your trench-royal, that thereby you may command so much water to serve your turn as you desire. Suffer it to descend where you mean first to mow, and you shall find this manner of drowning in the morning before you mow so profitable and good, that commonly you gain ten or twelve days' advantage in growing.— For drowning before mowing, a day, or even two or three, so supplies the ground, that it doth most sweetly release the root of every particular grasse, although the sun be never so extream hot. This practice will often make good a second mowing, and in walking

it some half mile eight foote deep, and in sixteen foote broad. All the rest of the country miles and an half in length, according proportion. When my worke began, of their courtesie to give it commendation the invention."

The author then makes an account for a delay in his work, occasioned by processes of courts of Star-chamber, which compelled him to deliver up his custody.

"These court hairens in my water-work."

ward in J. carrying it into execution is very sim-

tan tayl: a large trench for a reservoir should be journe as high a level as possible, and its water should be conveyed at pleasure by smaller trenches on its sides to the ground, within its command. The water should not generally remain long on the ground, and as before observed, it should be more sparingly applied to clayey, than to light and sandy soils.

One of the greatest experiments in this way, which has been attempted of late years in Herefordshire, has been attended with complete success on the estate of R. P. Knight, Esq. of Downton Castle.

By making a wear on the river Team, with proper courses for the water, that gentleman is now enabled to irrigate two hundred acres of land, which were never watered before, with the assistance of the least flood; and one half of that quantity even in the driest season. The whole expense of the work will not exceed 250*l*.

The intelligent farmer, who fairly calculates the
 merit of this measure, and who understands the atten-
 tion bestowed on it by his forefathers, and the success
 which it has been attended, cannot hesitate to
 least as matter of experiment, should he
 be inclined to receive it as altogether con-
 fidence.

also.
 will certainly succeed
 down at the end
 113

over grounds, I will tread as on velvet, or a Turkey carpet."

The perseverance and zeal of Mr. Vaughan seems to have excited some attention to this valuable branch of rural management ; for Dr. Beale, who wrote his " Herefordshire Orchards," about the year 1656, makes this remark : " other helps of pasture we do not omit ; every rill of water is carefully conducted to its best use ; if it runs from a fat stream, lime-stone, or land-flood, we find benefit from it, if withal we let it pass over and away, before it exchangeth its fatness into a cold hunger, which falls out in a very few days."

The benefits to be derived from irrigation are too obvious to require a detail ; the same meadow or pasture, which without its application produces one load of hay only, will certainly produce two loads in many cases, where watering is adopted.

The mode of carrying it into execution is very simple and plain : a large trench for a reservoir should be made on as high a level as possible, and its water should be conveyed at pleasure by smaller trenches on its side or sides to the ground, within its command. The water should not generally remain long on the ground, and as before observed, it should be more sparingly applied to clayey, than to light and sandy soils.

One of the greatest experiments in this way, which has been attempted of late years in Herefordshire, has been attended with complete success on the estate of R. P. Knight, Esq. of Downton Castle.

By making a wear on the river Team, with proper courses for the water, that gentleman is now enabled to irrigate two hundred acres of land, which were never watered before, with the assistance of the least flood ; and one half of that quantity even in the driest season. The whole expense of the work will not exceed 250/.

The intelligent farmer, who fairly calculates the benefit of this measure, and who understands the attention bestowed on it by his forefathers, and the success with which it has been attended, cannot hesitate to adopt it at least as matter of experiment, should he even be disinclined to receive it as altogether confirmed by experience.

CHAPTER XIII.

LIVE STOCK.

SECTION I.—CATTLE.

THE cattle of Herefordshire have long been esteemed superior to most, if not to all, the breeds in the island. Those of Devonshire and Sussex approach nearest to them in general appearance. Large size, an athletic form, and unusual neatness, characterise the true sort: the prevailing colour is a reddish brown with white faces. The rearing of oxen for the purposes of agriculture prevails universally: nearly half the ploughing is performed by them, and they take an equal share in the labours of the harvest.

They are shod with iron in situations which frequently require their exertions on hard roads; but it has already been noticed, that grazing is not generally pursued except for provincial consumption.

The shew of oxen in thriving condition at the Michaelmas fair in Hereford, cannot be exceeded by any similar annual collection in England: on this occasion they are generally sold to the principal graziers in the counties near the metropolis, and there perfected for the London markets. An original account book, kept by William Town, in the vicinity of Hereford,

has the following entry: "25 Aug. 1694, sold the nine oxen at 52*l.*; the money to be paid into the Exchequer within a month."

The price was therefore five guineas and a half each; and they were probably sold fat in London. Since that date, the size of oxen has doubtless increased very considerably, and the price has also advanced in at least a six-fold proportion.

In a country where markets demand so large a portion of animal food, the improvement of those animals which supply it, becomes an object of general and great importance. Due attention to this point has not been wanting; but the benefit yet received is far from complete. Amongst the improvers of the national stock, Mr. Bakewell's name will be expected to stand in the foremost rank. His cow, and that of the Midland breeders of improved long-horned cattle, is generally acknowledged to be amongst the best in the island for the purposes of the grazier. The offal and bone are small, when compared with its weight; whilst its disposition to fatten is equal, or nearly so, to that of any other breed in the island. It is however ill-calculated for the dairy: its constitutional disposition to accumulate flesh, is in opposition to the qualities of a good milking cow. In consequence, it affords but little milk, compared with other sorts; but the quality, as usual with the improved breeds, is excellent. The ox is also coarse and inferior beyond most others. They who are unacquainted with the breeding of animals will naturally conclude that the improvement of the cow necessarily includes that of the ox; but this is by no means the case.*

The flesh of the male, in this animal, is invariably

* Mr. Knight's communication on this occasion.

coarser than that of the female, and it possesses in consequence comparatively little disposition to fatten.

Hence that improvement, which renders the cow excellent, generally leaves the qualities of the ox extremely defective. If the cows of Leicestershire were shewn as stock in opposition to those of Herefordshire, a competent judge might perhaps hesitate to pronounce which had the preference.

But the Leicestershire cow, such as it is at present, will never breed a rival to the Herefordshire ox. The whole attention of the Leicestershire breeder has been directed to the improvement of his cow; and for the use of the grazier, he has made her an excellent animal. The Herefordshire breeder on the contrary, has sacrificed the qualities of the cow to those of the ox: he does not value his cow according to the price which the grazier would give for it, but in proportion as it possesses that form and character, which experience has taught him to be conducive to the excellence of the future ox. Hence the cow of Herefordshire is comparatively small, extremely delicate, and very feminine in its character. It is light-fleshed, when in common condition, but capable of extending itself universally in a short space of time, when fattening. Experience seems fully to have proved, that these qualities in the cow are necessary to perfection in the ox; and that when the cow is large and masculine in its character, and heavily loaded with flesh, the ox will be coarse and brawny, and consequently unkind and tedious in the process of fattening. It may here be remarked, that there is an extraordinary difference between the weight of a Herefordshire cow and the ox bred from her: perhaps other sorts eminent for producing fine oxen, are similarly distinguished; but it is a fact, that a Herefordshire

cow will not unfrequently be the mother of an ox of nearly three times her own weight. Mr. Knight, who made this observation, recollects no instance of this great disproportion in the weight of the males and females of the long-horned cattle. That gentleman farther observes, that he is unable to discover what advantage the public have derived, or are likely to derive from a breed of cattle, which are neither calculated for the dairy, nor for breeding oxen.

When the ox is to be kept as a beast of draught, and afterwards fattened for the market, it must be advantageous to the farmer and to the community, that every attention should be paid to the improvement of its breed; and in this case, and this case only, the disposition of the cow to give milk, should be disregarded. The difference in the dairy between a good and an indifferent milking cow, on the pasture which is adequate to the keep of the latter, will seldom exceed five pounds, and if the animal be good, a very poor pasture will be sufficient; but the difference between a good and bad ox will often exceed twenty pounds, where both have consumed in fattening, equal quantities of food: individuals and the public are therefore equally and evidently interested in the improvement of the labouring ox. Persons of little experience, adds Mr. Knight, in the breeding of cattle, may perhaps think that a sort is obtainable which will unite the two objects: but experience will convince them, that in endeavouring to approach two opposite points at the same time, they will never be able to reach either. Where the soil is well calculated for the dairy, every attention should be paid (and little has hitherto been generally bestowed) to obtain and improve the best sorts of milking cows; and where the ox is kept (in a county adapted to the plough)

to a proper age as a beast of draught, nothing conducing to his excellence ought to be neglected.

A cow must however give milk enough to keep its calf fat, or it is disqualified for breeding a good ox, because the calf would be spoiled before it had acquired the proper age to be weaned.

SECTION II.—SHEEP.

The provincial breed of sheep is termed the Ryeland; the district so named is in the vicinity of Ross, and often alluded to in the course of this survey; being particularly favourable to them from the dryness of the soil, and the sweetness of the herbage.

They are small, white-faced and hornless, the ewes weighing from nine to twelve and fourteen pounds the quarter; the wethers, or *wedders*, from twelve to sixteen and eighteen pounds. In symmetry of shape, and in the flavour of their meat, they are superior to most flocks in England; in the quality of their wool, they are wholly unrivalled. They lamb in February and March; but during winter, and particularly in time of lambing, the store flocks are generally confined by night in a covered building provincially termed a *cot*, in which they are sometimes fed with hay and barley straw, but much more frequently with peas-halm. Some breeders accustom them to the cot only in very severe weather, and in lambing time. The practice was derived from the Flemings, and introduced into England about the year 1660.*

* *Systema Agriculturae*: fol. Lond. 1668.

The manure made from the peas-halm is excellent, and in large quantity ; whilst the coting materially contributes to the health of the animal, and the fineness of its fleece. The quantity shorn from each of the small original breed does not average more than two pounds, but the quality is such as almost to rival that imported from Spain. The price has often been as high as thirty-three shillings the stone of twelve pounds and a half untrinded, when coarse wool has brought but ten or twelve shillings. A cross has been made between the Rye-lands and the new Leicester sorts, to the advantage perhaps of the *breeder*, who is situated on good land, but certainly to the detriment of the wool.

The preservation of the original fineness of this great staple commodity, or its improvement, are perhaps objects worthy of national attention.

A cross between the Rye-land and real Spanish seems the most probable mode of adding to the fineness and value of the wool, and amongst many spirited breeders who are now making the experiment, Colonel Scudamore of Kentchurch, sold the fleeces of a flock so crossed at forty shillings per stone, in the fair at Ross, in the course of last year. The first stage of the cross materially detracts from the beauty of the Rye-land's form : but by continued attention, this objection will probably be removed ; and the flavour of the mutton is uninjured. Lord Somerville has found that they feed quickly, and weigh heavily, although their form be not attractive ; but, perhaps, form in this animal is of little comparative consequence. An ox rarely fattens well, or has flesh of good quality, unless it be in one particular shape ; but sheep fatten well, and the meat is of prime quality in those of very different forms. Two Leicesters, which were fed by Mr. Hewer, of Abergavenny, and slaughtered before the agricultural society

of this county in March last, weighed no less than fifty-one pounds in each fore-quarter, and forty-five in each hind-quarter. But notwithstanding this great weight, the Leicesters are often found less heavy than they appear to be ; whilst the half Spanish, weigh more than is generally expected from its size.

Leominster has usually been celebrated as famous for this wool ; but possibly it might have been the place of its sale rather than of its growth, as the rich pastures in that vicinity and elsewhere, are generally supposed to have the effect of deteriorating the wool,

Philips, the poet, writes,

“ ————— Can the fleece
 “ Bætic, or finest Tarentine compare
 “ With Lempster’s silken wool ? ”

Camden terms it “ Lempster’s ore,” and Drayton asks

“ Where lives the man so dull on Britain’s farthest shore,
 “ To whom did never sound the name of Lempster ore ?
 “ That with the silk-worm’s web for smallness doth compare.”

Dyer also thus notices it in his poem on this subject,

“ And beauteous Albion (since great Edgar chac’d
 “ The prowling wolf) with many a lock appears
 “ Of silky lustre : chief, Siluria, thine ;
 “ Thine, Vaga, favour’d stream, from sheep minute
 “ On Cambria bred ; a pound outweighs a fleece.”

The Dishley or new Leicester is adopted by Edm. Jones, Esq. of Fawley ; this breed must be allowed the merit of accumulating larger quantities of fat, than any other animal of its species, and has perhaps also the merit of fattening on a rich pasture with less food in proportion to its weight, than other breeds. It is an indolent animal, alike incapable of, and indisposed to action. In consequence, it requires a pasture where it can without labour, collect its food : it is also subject

to some peculiar disorders, and requires much care and attention in the management. In former periods, the sheep collected its food from situations where no other animal was capable of subsisting. Of late years an opposite system has been adopted, and many thousand acres of the best tillage ground have been converted into pasture for sheep. Mr. Bakewell's breed is the offspring of this system ; and they are found extremely profitable to the purchaser from the smallness of its bone, compared with the weight of its meat. Mr. Knight and many other experienced farmers are of opinion, that the country will never derive further benefit from this introduction and use, than that of crossing other breeds with it, so as to give them an increased disposition to fatten, without the loss of those properties which render the sheep capable of procuring its living on a scanty pasture ; and without injury to the mutton.

The quality of Mr. Bakewell's wool is inferior to most sorts in the island, nor does it appear that the quantity shorn from each is remarkably great ; whilst, according to the modern system, the sheep being brought to market before it is two years old, the wool is of small value, if compared with that of the ground which the animal has occupied.

The quantity of animal food, however, which is thus produced for the market is very considerable, but according to Mr. Knight's experience, it is far short of what the same weight or value of herbage would supply, if given as formerly to the labouring ox or cow. " A well-bred heifer of three years and a half old, after supplying the market with a calf, if moderately kept and fattened, will not weigh less than six hundred pounds when slaughtered. This weight is equal to that of six sheep of twenty-five pounds the quarter ; and I am of

opinion that four sheep of that weight cannot be brought to market at the same expense to the community as a single heifer. A very coarse and indifferent pasture will suffice for the heifer in the summer, and it will be fed with straw and a few turnips in the winter. The food of the large sheep is of a much more expensive kind; and the calf and hide of the one will be found an ample equivalent for the wool and skins of the others. My pasture only will not fatten the new Leicester, and I have always been able, in rearing cattle for stock, to give my crop of turnips to the Herefordshire cow and ox, with much greater advantages than to sheep of any kind; and I have not yet found a sheep of one or two years, which would fatten in the same number of weeks, with a heifer of that breed. It is said by the admirers of Mr. Bakewell's sheep, that they consume less food than any other breeds: but I observe, that they are always kept in pasture where they have the power of eating much; and I can safely attest, that those which I have fattened had remarkably good appetites."*

Mr. Jones, of Fawley, an eminent breeder, has more favourable opinions of this sort of sheep, and has continued them several years. His land is light and fertile; he is however now crossing the Leicester with the finer wooled breeds. The South-down sheep have lately been introduced into this county, and are considered as the general rival of the Leicester, although the animals are of very different character, and suited to opposite purposes. The South-down is active and hardy, well adapted to travel far in search of its food, and to seek it on the hilly sheep-walk or mountain. Some changes in

* These observations were obligingly communicated by Mr. Knight, in answer to queries submitted to him, on the occasion of making this survey.

its form have been effected by the skill and attention of the breeders, and have conduced much to its improvement. The wool of this sheep is fine, but Mr. Knight remarks "all the samples which have fallen within his observation have proved somewhat hard and wiry, compared with the best Rye-land or mixed, whence, I trust, (that gentleman concludes) that in the improvement of this breed, more attention has been paid to the carcase than to the fleece: few breeds in England appear equally patient of cold, and equally calculated to exist on exposed and mountainous commons."

The flavour of its mutton is also a further recommendation; but Mr. Knight remarks, "about seven years ago, I mixed a few South-down sheep with my Rye-land flock, in order to ascertain their comparative merits. The lambs proved much more patient of cold, than those of the Rye-land breed, when very young; but both the lambs and the parent sheep appeared to fare ill on the fallows and the mountains, where the Rye-lands kept in good condition; and the experience and opinions of some of my acquaintance who have made similar experiments, induce me to think the South-down much inferior to the Rye-lands, or fine-wooled breed of Herefordshire, which, till lately, has but little attracted the public attention. This animal appears to me to be much more patient of hunger, and to keep itself in better condition on a less quantity of food, than any other which I have had an opportunity of observing. To the great scantiness of the pasture on which it is usually condemned to feed, is to be attributed the fineness of its fleece; for the quality of this becomes immediately impaired by a copious supply of food; and this circumstance should be attended to, in every county where these sheep are introduced.

“ Some attention has lately been paid to its improvement ; and although the wool is somewhat less fine in its quality than it formerly was, it is still the finest in the island, with the exception of the Spanish sort recently imported ; and the animal must be allowed on the whole to have been considerably benefited. The quantity of wool afforded by the improved sort of Rye-land, although increased, is full far from large ; a three-year old wether, rarely yielding more than three pounds and an half.

“ But as a large number of sheep will subsist on a small portion of ground, and the wool is still worth two shillings and sixpence the pound, its value, compared with the quantity of food consumed by the animal, is probably much greater, than that afforded by any other breed.

“ The Rye-land sheep readily acquires on a very moderate pasture, that degree of fatness which renders its flesh more acceptable ; but it is wholly incapable of being loaded with fat in the manner of Mr. Bakewell's. It appears to me to fatten somewhat more quickly than those I have seen of the South-down breed.

“ If the sheep be to remain, what I apprehend nature has made it, a mountain animal ; if it is to collect its food in situations where the ox and the cow cannot subsist ; and if wool be still considered as an object of national importance to Great Britain, I have no hesitation in asserting, that either of the preceding breeds, the Rye-land, or the South-down, deserve a preference to that of Mr. Bakewell.

“ If, on the contrary, we are, in imitation of the Leicester, the Northampton, or the Warwickshire farmers, to convert our richest and most productive tillage into pasture ; if the sheep be intended to banish

the labouring ox and the cow, and be brought to market at a year and a half old, when it can supply the manufacturer with only a small portion of very indifferent wool, we cannot hesitate to pronounce Mr. Bakewell's sheep to be the best in the island. Its merits in fattening easily and abundantly, and being ready for the market at an early age, and in considerable weight, cannot be denied. In short it is an excellent animal in its way, but it is not such a one as is best adapted to a country which has recently imported corn in a single year to the amount of ten millions of money. The cow and the labouring ox are wanted; and were these made to resume the rich pastures now occupied by the sheep; were our tillage extended as formerly to supply these with straw during winter; and were our sheep suffered to acquire their full growth in their third year, our manufactories would be better supplied with wool both in quantity and bulk; and our markets be better supplied with animal food."

The Rye-lands sheep has lately found many purchasers from other counties; and there is no doubt of their success on proper pastures. Mr. Knight is one of the gentlemen trying the merits of a cross between the Rye-land and the Spanish. The wool is excellent and in large quantity; and he does not hesitate to say that the merits of the fleece will counter-balance every defect. The sheering in Herefordshire is performed by women.

SECTION III.—HORSES, AND THEIR USE IN HUSBANDRY COMPARED WITH OXEN.

The horses used in Herefordshire have no peculiarity; and perhaps no animal has been more altered, or in an

agricultural point of view less improved, than the horse has been within the last twenty or thirty years. Its height, its bulk, and its powers for short and sudden exertion, have been considerably increased, but by this of size, it has been rendered much more subject to disease and accident, and much less capable of bearing long and continued labour. It is contended in favour of the large modern cart-horse, (of which sort some teams are kept in Herefordshire at great expense,) that it moves its load by leaning on the collar, and consequently that its weight must be of the first importance. And where the weight it has to contend against, is to be moved only on level or decending ground, there would be much force in the argument. But the loaded waggon requires no force to increase its natural impetus in descending a hill, and it is moved without difficulty on level ground. It is in ascending a hill, that power is wanted in the horse, and here it can apply none by merely leaning its weight against the collar: for it loses much more by the increased distance of its hoof from its body, than it can possibly acquire by the increased weight it possesses.

Horses, therefore, should not be preferred from their size; the well known Suffolk breed exhibits no bad model of an useful animal of this kind.

The following return was made by an intelligent and extensive farmer, on the subject of comparing the different values of the horse and the ox in the common purposes of agriculture. "Whether oxen or horses ought to be preferred by the husbandman to till his glebe, and perform the necessary labours on his estate, is of greater importance in my opinion than people in general are disposed to admit.

"I believe most persons will allow, that population has increased, and that the necessaries of life have been

advanced to very exorbitant rates: the public benefit, therefore, requires, that every method should be taken to encourage the use of those animals in agriculture, which consume the least valuable food, and which afterwards supply the markets, in preference to those which have not such qualities. But as the public good unfortunately is not always so strong a stimulus as private interest, it appears advisable to form an estimate of the comparative profits of the horse and the ox, in order that they, who are not too much prejudiced in favour of the former, may be induced from a prospect of gain to adopt the use of the latter, as much as their situations will admit. I am fully aware, that horses are a most valuable and useful race of animals, and that their services in agriculture are indispensable; but I am of opinion, that on dry and sound land their number may, and ought to be, reduced, in the proportion of one half, or even more.

I used oxen several years, but thinking that they could not be managed without a man and a boy, I adopted horses to save the expense of a second attendant, placing three to a plough, and engaging one person only to turn it, and drive. Experience soon convinced me, that four oxen in harness, with one man, or able boy, could execute as much work as three horses with the same attendance; but I prefer four oxen in the yoke, thinking that they lie more immediately under the arm and eye of the driver, and that they make a more steady purchase.

“ In the East Indies, their oxen draw the heaviest artillery; and in the West Indies, they cultivate the sugar plantations: which affords sufficient evidence of their capability of bearing extreme heat, and hard labour: although it could not be expected, that the improved English breeds would be found equally patient.

The purport of these observations is to point out, that oxen are less exceptionable than generally believed to be; that they will perform a great deal of work, during four years; and when at maturity, afford a large supply to the market, and a considerable sum to their owner: that horses, on the contrary, will consume a very large proportion of the produce of their labour, and sink in annual value, until they are worthless, and inapplicable to any useful purpose.

“ The following Dr. and Cr. account I believe to be correct; but, if it should be deemed by some, that oxen are represented in a too favourable light, they are welcome to subtract one half of the balance in favour of oxen; not because I deem them too highly rated, but because the inference will still prove a strong recommendation to their use.

[1803
1804
1804]

Dr. Oxen.		Contra Cr.	
£. s. d.		£. s. d.	
1803 2d. Feb.	To four Herefordshire bullocks at 20l.	1804 2d. Feb.	By one year's labour of four oxen First cast of ditto Improvement of each, at 3l. per head
1804 2d. Feb.	To keep of ditto at four shillings per week each		
	Repairing harness		
	Balance in favour		
	£134 12s.		£134 12s.
	Dr. HORSES.		Con. Cr.
	J. s. d.		£. s. d.
1803 2d. Feb.	To three horses	1804 2d. Feb.	One year's labour of three horses
1804 2d. Feb.	To hay and grass, at four shillings per week		Decay and blemishes at 2l. each, reduces value to
	To corn, at ditto		
	To tax on each, 12s. 6d.		Extra expenses in taxes, shoeing, farrier, and gradual decrease of value
	To repairing harness		
	To eight sets of shoes, at 6s.		
	To drugs and farrier		
	£158 13s. 6d.		£158 13s. 6d.

Thus the loss of £32. 1s. 6d. on horses, and the gain of £12. on four oxen, make a balance of £44. in favour of the latter.

Oxen are generally worked under the yoke, although several farmers, influenced by the recommendations of the Agricultural Society have adopted harness, and deem it far preferable to that heavy and awkward incumbrance. The utility of placing oxen in one line, so that they may proceed in the furrow without treading on the ground which is to receive the seed, is sufficiently obvious.

Their use on roads, and particularly on husbandry roads, is also much extended and facilitated by their comparatively new practice. The harness cannot be too light and simple, and in many instances, cords have been found no mean substitutes as traces, instead of the more expensive material of leather.

SECTION IV.—HOGS.

No one breed of hogs, or of pigs as they are provincially termed, are peculiar to Herefordshire.

A small sort, said to be Mr. Bakewell's, has been dispersed in several parts of England, and this animal contains, according to the breeder's application of the term, much beauty. In other words, its form is well calculated to supply a large quantity of meat, compared with its bone and offal. It also keeps itself in good condition on a moderate quantity of food, and it is easily fattened.

Mr. Knight acknowledges these merits, but is notwithstanding of opinion, that it possesses very considerable defects: "its growth is extremely slow, and its weight and fatness, compared with some other breeds, are not such as its external appearance promises."

"I was induced by the encomiums, which I had

frequently heard on Mr. Bakewell's animals, to obtain a male and female of this new sort, in order that I might propagate others of the same breed, which I then believed possessed great excellence. When the boar of this kind was six months old, I reared a male and female of my own breed, (which is a mixture of the Berkshire and large white hog of Shropshire,) and both kinds were fed alike. Mr. Bakewell's kept themselves in better condition than the others, but they grew so slowly, that, although they were masters of their rivals, and the favourites of the person who fed them, Mr. Bakewell's proved greatly inferior to them in weight at the end of twelve months.

“ Not fully satisfied, however, with this experiment, I purchased two more of Mr. Bakewell's sort, when of a proper size to be fattened, and when killed, they weighed eight score and an half. They fattened well, but the quantity of food which they consumed, was proportionably greater than a single animal of my sort required, whose weight was more than equal to that of Mr. Bakewell's two.

“ It may perhaps be supposed, that the breed, on which these experiments were made, were not the best of the kind; but I have seen many others, and particularly some sent by the Duke of Bedford into Herefordshire, for the express purpose of improving our sorts, and none were superior to those which I possessed.— Other gentlemen, with whom I am acquainted, have made the same experiments with a similar result.” And hence Mr. Knight naturally concludes, that the present predilection for small animals of this kind is not well founded.

SECTION V.—RABBITS.

Rabbits, being solely adapted to such poor soil or rocky precipices as will sustain no other stock, are rarely attended to, in Herefordshire.

The markets are generally supplied from a warren of the Earl of Oxford, near the north-west border of the county. They bring two shillings the couple at the beginning of their season, and twenty-pence afterwards, besides the value of their skins.

SECTION VI.—POULTRY.

Poultry have doubled their price within the last fifteen or twenty years ; and the accumulation of several small farms into one, has contributed essentially to this alteration ; the increased rates of other articles must also have had its share in producing an effect, much and severely felt by small housekeepers. In the year 1740, a fat goose, ready for the spit, brought ten-pence on an average in the market at Hereford ; in the year 1760, it had only advanced to one shilling ; in the present year 1804, it is worth four shillings at least. Fowls and pigeons have increased in the same rapid proportion. A couple of fowls in 1740 brought sixpence ; in 1760, seven-pence ; in 1804, they bring two shillings and four-pence. Pigeons in 1760 were worth eighteen-pence the dozen ; in 1804, four shillings and six-pence. A roasting pig has increased in price, within the same period, from ten-pence to four shillings.

SECTION VII.—PIGEONS.

Pigeons are not generally kept by the tenants of farms in this county, nor is their increase a desirable object, where so large a proportion is occupied by grain.

SECTION VIII.—BEES.

Bees are confined to the cottager's garden, and are not there found in any abundance. To stimulate this branch of rural economy, our provincial Society have offered a premium of three guineas to the cottager, who shall sell, *or let out to halves*, the greatest number of stalls to persons not keeping bees; such stalls to be alive on the first of June in the following year; also two guineas as a second premium, and one guinea as a third.

It is supposed, that on every hundred acres of land, one hive might be sustained during winter; the whole number of hives in the county would then be 6000; and, if each yielded honey and wax amounting to ten shillings in value, the provincial produce would be equal to three thousand pounds. Thus, this minor branch of husbandry, if properly extended, would prove of more importance than is usually attached to it.

CHAPTER XIV.

RURAL ECONOMY.

SECTION I.—LABOUR.—SERVANTS.—LABOURERS. —HOURS OF LABOUR.

THE price of labour throughout the county, except during the period of harvest, averages six shillings per week in winter, and seven shillings in summer, with liquor and two dinners. These prices are somewhat higher than those paid forty years ago ; but in the opinion of the writer of this survey, the increase is not proportioned to the increase in provisions and every article of life since that date.

Wheat was then sold in Hereford market at three shillings per bushel on an average. The labourer, therefore, who between Monday morning and Saturday night could earn four shillings and six-pence, that is nine-pence per day, earned the value of one bushel and an half of wheat in our provincial measure of ten gallons : but, at the present period, the labourer, who carries home even seven shillings and six-pence per week, carries the average value of three pecks of wheat only : for no one, who considers the advanced rents, taxes, and other circumstances of a farm in 1805, will, I think, contend, that wheat can be produced by a tenant, with a fair and reasonable profit, at a less rate than ten shillings the Herefordshire bushel, or one shilling the gallon.

The consequence of this presumed disproportion is not so beneficial to the farmer as some persons may imagine. The labourer, who cannot earn more than the value of as much wheat as the demands of a wife and three or four children require, (and unfortunately his utmost exertions will not always produce as much,) must apply to the humiliating resource of parochial aid for a supply of other wants, and the farmer is consequently subject to so many more loans for the support of the poor. Where a considerable part of a parish is occupied by houses of some value, but without land, or by part of a town, the burthens of the farmer are in some degree alleviated by the contributions of other classes; but this cannot occur, even were the practice quite free from objection, but in very few instances compared with the whole: whilst on the other hand, - the poor-rates increase with an alarming rapidity, and the spirit of honest independence amongst the peasantry is damped into the sullen submission of slaves. Several instances exist in Herefordshire, where the prices of labour are increased and decreased with the rise and fall of grain; but such a practice, which, as far as has been tried, has proved free from objection, is still far from general.

If a certain proportion between the price of labour, and the average price of wheat, could be fixed by law, so as to render the applications for parochial aid necessary only in cases of a very large family, of unusual illness, of scanty seasons, or any other real emergency; the measure, it is presumed, would be honourable to the country, would stimulate industry and fidelity, would check dishonesty, and endear to a numerous class, their native soil. Under the present system and prices, it is obviously the duty, and the interest of the labourer to acquiesce with cheerfulness and content;

and such conduct will most effectually lead to the bettering of their condition, by proving that they deserve it.

The hours of labour in winter are from light to dark ; in summer, from six in the morning to the same hour in the afternoon.

In harvest, when the wages are nearly doubled to those engaged for that period only, the time is regulated by the emergency of business. In this season they often work during fifteen hours.

To improve the condition, and to increase the comforts of this valuable class of the community, must be deemed a most desirable object by every liberal and patriotic mind. According to the ideas of the writer of this survey, the principle, on which friendly societies are established, affords the means of promoting this object. The interference of Parliament in these establishments has hitherto been viewed with a jealousy hostile to their success ; but it is conceived, that the occupiers, or at least the principal occupiers of land, in every parish or larger district, in concert with the clergy, might patronize a society, to consist of all the labourers and male servants within its limits.

The general obligation should consist in the contribution of one penny per day from the wages of each member, to be left in the hands of their employer. A fund would thus be created, which should be considered as the sole property of the contributors, but liable to be applied to no purposes but those of the society. After a certain period, and in all cases of illness, age, large family, or accident, the payments should suddenly or gradually cease, and a certain allowance per week should become due to each subscriber. When members removed from one district to another, they might be entitled to a certificate of the amount of their property in.

the funds of the district quitted, and their allowance be made payable from those of the district in which they should reside. An annual adjustment of accounts, amongst the different societies in a county, would render this practicable without difficulty; and in cases of removal beyond the limits of the county, some similar arrangements might be adopted.

The comfortable prospect of a provision in old age or distress, would probably afford sufficient inducement to the young peasantry to engage in a plan of this nature, if properly explained and encouraged by their employers. It would also stimulate, whilst it rewarded industry; and a decided preference, if not an increase of wages, would naturally be given to members of such societies, by those who are in the habits of employing labourers and servants.

If made a national establishment, a parliamentary grant of a few thousand pounds would materially aid the funds in the infancy of the plan, and convince the lower class, of the attention of the legislature to their comforts.

The reduction of the poor-rates would prove one of the beneficial effects to be secured by an institution of this kind; and the honest independence of an Englishman would be flattered and confirmed.

The following are the average prices of wages now given to servants in the house by a Herefordshire farmer:

Waggoner	-	10 to 12 guineas per annum.
Bailiff or cattleman		8 to 10 ditto.
Dairy maid	-	6 to 7 ditto.
Under maid	-	2 to 3 ditto.

SECTION II.—PROVISIONS.

Some idea of the increase in the prices of the necessities of life in this county, within the last hundred years, may be formed from the following table, the accuracy of which may be relied on.

	1691		1740		1760		1804		
	s.	d.	s.	d.	s.	d.	£.	s.	d.
Wheat, per bushel of ten gallons,	3	0	3	0	3	0	0	10	6
Rye, (very little sown of late years)	2	0	—	—	—	—	—	—	—
Oats	0	10	0	11	1	0	0	4	0
White peas,	—	—	—	—	2	6	0	8	0
Barley,	—	—	—	—	3	6	0	6	0
Malt,	—	—	—	—	4	0	0	12	0
Butcher's meat per <i>lb.</i>	—	—	0	1½	0	1½	0	0	7
Pigs for bacon per <i>lb.</i>	—	—	—	—	0	4	0	0	6½
A goose,	—	—	0	10	1	0	0	4	0
A roasting pig,	—	—	—	—	0	10	0	3	6
A couple of fowls,	—	—	0	6	0	7	0	2	4
Pigeons per doz.	—	—	—	—	1	6	0	4	0
Fresh butter per <i>lb.</i>	—	—	—	—	0	4½	0	1	3
Best cheese,	—	—	—	—	0	3	0	0	9
Fresh salmon,	0	1	0	2	0	4½	0	1	3
Coals per ton,	—	—	11	0	14	0	1	4	0

A reduction in the prices of these articles by means of a larger supply is an object of the greatest importance, if not of necessity; and the best modes of effecting it will be, by a general cultivation of our waste lands, an improved system of management on those which are cultivated already, and a commutation of tithes on both.

SECTION III.—FUEL.

Coal is in general use as fuel by as many of the inhabitants as can afford the purchase of it, except for the demands of the farmer's kitchen. The Forest of Dean in Gloucestershire supplies the south side of the county and the provincial metropolis; the Cleve-hills of Shropshire furnish it for the northern and eastern parts; and the western procure it occasionally from Abergavenny. The town of Leominster has experienced some benefit in this respect from that part of the canal from Stourport which has been executed.

The price of coal varies according to the distance from the pit, and the means of conveyance. When brought to Hereford in barges on the Wye from the Forest of Dean, it now sells at twenty-four shillings per ton; when conveyed by waggons, it brings three or four shillings more; and the latter mode is in favour of the consumer from the size and superior quality of the article, the refuse of the pit being generally mixed with the heap designed for the barges. A still inferior sort is sold for the use of blacksmiths' forges, from twelve to fourteen shillings the ton.

These prices appear very high, when it is considered that the distance from Hereford to the collieries is only twenty-one miles, of which eighteen are a good turnpike road; and that a river flows within a few miles of the spot, which is often navigable to Hereford during several months together. This article has advanced no less than seven shillings in the ton, within the last seven years! and no effectual plan has yet been adopted to lower the present rates, or even to guard against a further increase.

CHAPTER XV.

POLITICAL ECONOMY, AS CONNECTED
WITH, OR AFFECTING AGRICULTURE.

SECTION I.—ROADS.

THE roads of Herefordshire were once proverbially bad; and they are still capable of being made much better. A modern writer has observed that "Herefordshire abounds with residences of principal families, in spite of its roads." Much however has been done within the last twenty or thirty years, and a considerable spirit is excited towards promoting their further improvement. The late Hon. Mr. Foley, of Stoke, with his accustomed liberality, gave an extent of ground through valuable fields near his house, as the site of a new road, which by his own orders was made thirty-six feet wide; whilst the site, or rather the *channel* of the old road, which he got in exchange, scarcely measured half that dimension.

Mr. Hereford, of Sufton, Mr. Cotterell, of Garnons, and many other gentlemen, have evinced a similar patriotism.

Coarse limestone, properly broken, is the material generally used for making or repairing roads in those parts of the county where it abounds. Where it does

not, the roads suffer from the want of it ; the north side of Herefordshire has the worst public roads ; the private are universally bad, excepting those situated on sandy or gravelly soils, which naturally require but little attention or expense.

SECTION II.—CANALS.

To the account already given of the natural rivers and streams of Herefordshire, it will not be improper to add some account of its navigable canals, whether executed or projected within its limits. The interests of husbandry are materially connected with the subject, and it shall be prefaced with a few general remarks.

Inland navigation is beneficial to a county ; first, in proportion to the heavy goods which it has to export, and next, in proportion to the quality it has to receive. Where the soil is deep, the roads difficult to be formed, and expensive in repairs, (as experienced here), this mode of carriage must be doubly advantageous. Herefordshire depends wholly on coal from other counties, and produces within itself large supplies of timber for navy and other purposes ; an almost peculiar article of export in its provincial liquor, and a considerable excess of grain beyond its own consumption.

Thus circumstanced, few counties, possessing neither iron-works nor any principal manufactory, can have greater occasion for the aids of navigation.

The precariousness of conveyance by the Wye has already been noticed, and no other river in its present state is even of partial utility in this way, excepting the occasional carriage of pigs of iron, in small boats to a forge on the Lug, called Tidnor, which is about two

miles distant from the junction of the Lug and Wye, and of coals to Lugwardine, about one mile further. An act of parliament was therefore obtained in the year 1791, for making a navigable canal from the city of Hereford, and by the town of Ledbury, to the Severn at Gloucester, with a lateral cut to the collieries at Newent.

The preamble stated the advantages to be derived from a regular and easy communication between this county and Bristol, Liverpool, London, and Hull, and also the interior of South Wales, and those ports; the improvement of land and estates near the canal, as well as that of public roads; besides affording access to many large and valuable mines of coal and quarries of limestone.

The clauses enacted, that the subscribers towards carrying into effect the objects of the bill, should be a body corporate and politic, by name of the "Herefordshire and Gloucestershire Canal Navigation;" by that name should have perpetual succession and a common seal; should have liberty to raise amongst themselves any sum not exceeding 75,000*l.*: and if that proved inadequate, the further sum of 30,000*l.* in shares of 100*l.* each, for carrying the same into effect. The whole expense, on a survey, was estimated at 69,000*l.* for which the subscribers were as usual to be indemnified by a tonnage on the articles conveyed. Subsequent acts have passed to enlarge the powers of the company; but the whole money required varied so essentially from the surveyor's reports, that more than 100,000*l.* have been expended, and half the design has not been completed.

An act for another canal to extend to Kington, from Leominster and Stourport, was obtained soon after the former. Lime and coal from Shropshire were stated to be the principal objects of importation, and the usual produce of the county, those for export.

The expense from Kington to Leominster was estimated by an engineer at 37,000*l.* between Leominster and Stourport at 83,000*l.* A part of the latter extent was completed in the year 1796, and has effected some reduction in the price of coal, without reaching so far as Stourport. A miscalculation of expenses, similar to that of the other canal, has stopped, for the present at least, all further progress; and the two instances afford a useful lesson of caution to those who may in future engage in speculation of this nature.

SECTIONS III. AND IV.—FAIRS AND WEEKLY MARKETS.

About the seventeenth year of the reign of Henry I. (A. D. 1189), a charter was granted to the bishop of Hereford, enabling him to hold a fair of three days continuance in the city, and to receive the whole of the tolls and other fees paid on similar occasions. It was styled St. Ethelbert's fair, in memory of the tutelary saint of the church, and was afterwards extended to nine days in duration. It is still annually proclaimed; and it takes place on the 19th day of May, being the eve of Ethelbert's feast, and it continues during that day and the whole octave of the saint, for the sale of grain, and all the articles of merchandize usually disposed of in Hereford. The city of Hereford has also three weekly markets; viz. on Wednesday for poultry and butter, on Friday for live cattle, and on Saturday for grain, poultry, butcher's meat, butter, &c. &c.

The fairs of Hereford are held on the Friday after Candlemas day; on Wednesday in Easter week; 19th May; 7th July; 20th October.

Leominster has a weekly market for general purposes on Friday: its fairs are held on the Tuesday after Mid-lent Sunday: 15th May; 4th July; 4th September; and 8th November.

Weobly market is on Tuesday: its fairs, on Holy Thursday, and three weeks after.

Ross market is on Thursday: its fairs, on Holy Thursday; 3d June; 20th July; 10th October; 11th December.

Pembridge market is on Tuesday: its fairs, on 12th May, and 22d November.

Ledbury market is also on Tuesday: its fairs, Monday before Easter; 12th May; 22d June; 2d October; Monday before St Thomas's Day.

Bromyard market is on Monday: its fairs, Thursday before 25th March; 3d May; Whit-Monday; Thursday before St. James; and Thursday before 29th October.

Kington market is on Wednesday: its fairs, on Wednesday before Easter; Whit-Monday; 2d August; and 4th September.

SECTIONS V. AND VI —COMMERCE AND MANUFACTURES.

Unprovided with any manufacture of general consumption (except that of gloves, which is carried on in the city on a very limited scale), the articles of commerce in Herefordshire must principally be confined to those immediately concerned with agriculture.

If we examine this county at the beginning of the last century, and previously to the existence of the national debt, we shall find that it contained comparatively very few expensive establishments.

The population, like that of other parts of Europe, then consisted of the proprietors of the soil, who are the naturally rich inhabitants of every county ; the clergy ; the farmers ; the peasantry ; and a limited number of manufacturers, tradesmen, and mechanics. To this list, the national debt and extended commerce have added the national creditor, the merchant, and the manufacturer, for the consumption of other nations.

The affluent national creditor now vies with, or exceeds the proprietor of the soil in equipages, in consumption, in establishments, and in every expense ; whilst neither himself nor the source from which he draws his abundance or his revenue, contributes one tittle to the national produce. In taxes, he takes a considerable share ; but by this alteration the number of expensive establishments is multiplied, and the consumption of the necessary articles of life is greatly increased. The merchant, like the national creditor, adds to the consumption of corn, without increasing its annual quantity, except by importation. In general he adds nothing to the national produce of provisions, whatever increase he may bring to the external power and riches of his country. A given number of manufacturers, assembled as they necessarily are in immense masses, will always consume much more than an equal number of peasantry. The latter derives no inconsiderable portion of the food which supports himself and family from his little garden, possibly more from his cow, or even sheep ; and some from the abundance, or the refuse, of his master's dairy.

The manufacturer, on the contrary, receives almost his whole support from corn and animal food. These are conveyed to him, in many instances, from a considerable distance, and the national expense is thus in-

creased. Unfortunately also, the intercourse of numbers, as in this case, tends to much consumption in the way of riot, licentiousness and excess. These causes have their effects in contributing to the advanced prices of the necessaries of life.

War is also a cause of scarcity and dearth: taking them in the aggregate, every soldier, sailor, or prisoner of war, probably consumes a quantity of provisions, or occasions a waste in them, equal to two peasants. The number of these in the late war, may be estimated from three to four hundred thousand men; and if we add to the increased consumption of food thus occasioned, the diminished produce of the country, from the want of sufficient labourers only, it will not perhaps be far from the truth, if war be estimated as equal to an increased population of half a million.

SECTIONS VII. AND VIII.—POOR AND POPULATION.

The subject of the poor has been in some degree treated of in the fourth chapter; and of the population, has been given in the first.

Having no general manufactory to engage them, the children of the poor are too frequently brought up in idleness and dirt. At sixteen or eighteen years of age, they generally procure situations as servants, or employ, as labourers: inferior offices claim also their services (especially of the boys) at an earlier age. For although their education and habits may not have afforded the most promising prospect of their future industry and attention, the population is so much thinned by the levies and operations of war, that the farmer in parti-

tular, has but little opportunity of selection. These observations apply to the males: the females have no other than the usual resources of such situations, as they gradually become qualified to fill as servants, except the glove-trade in Hereford, which engages an inconsiderable number. When wheat exceeds the price of ten shillings the bushel, from any cause whatever, the labourer who has a wife and three children, and possesses no other resources but those arising from his own manual exertions, must apply to the parish for other means of support.

The want of employment for the poor occurred forcibly to the mind of Lord Scudamore, of Homlacy; and in hopes of affording it, that nobleman, in a codicil to his will, dated 4th September, 1668, bequeathed the sum of 400*l.* as a perpetual stock, to set to work the poor people of the city of Hereford. In the year 1698, this money was put out to interest on mortgage, by the then bishop of Hereford, and the other trustees under his lordship's will. In the year 1763, it had accumulated with the interest to 109*l.* 11*s.* which sum was then laid out in the purchase of three per cent. annuities, and produced 1320*l.* 14*s.*

By a decree of the Court of Chancery in the following year, the bishop and dean of Hereford, the chancellor of the diocese, the rector of St. Nicholas, and the mayor, senior aldermen, and town-clerk of Hereford, were appointed trustees; and a majority of them were empowered to allow a salary not exceeding 15*l.* per annum, to any person skilled in the linen, or woollen manufactories, that is to say, in carding and spinning wool, in weaving and dressing woollen cloths and flannels, or in spinning flax and hemp, and weaving cloth to be made with it. They were also empowered to purchase such implements and materials as should be

necessary ; to sell the manufactures when wrought, and to enter into contract touching the same. Provisions were also made for the further management of the concern ; but although additional power was conferred by act of parliament to dispose of the fund towards employing the poor of the city in *any manufacture, trade, or business whatsoever*, no such application of it was made until the year 1772, when, under the direction of a clothier from Gloucestershire, a number of the poor inhabitants were instructed in spinning wool ; but from some mismanagement, the scheme not only failed, but the sum of 500*l.* which had been advanced from Lord Scudamore's fund, was irrecoverably dissipated. Notwithstanding this loss, the accumulated amount of the fund, now exceeds three thousand pounds.

Another attempt to find employment for the poor by means of a manufactory, was made about the same time, under the directions of Mr. George Bradford, an ingenious and very skilful mechanic of Hereford. Many carpets of excellent quality were woven and finished in Hereford : several of them are now in good condition (particularly one of large dimensions at Kentchurch), and their colours have undergone no perceptible change.

Broad and narrow cloths, kerseymeres, and shalloons, were also included in this plan, and their textures were much approved. The opportunity of purchasing the finest wool on the spot, and before it had passed through the hands of the dealers, was found very advantageous ; but the death of one of the parties concerned, and perhaps some want of public encouragement, operated so much to the prejudice of the undertaking that the whole was discontinued after a few years.

A small manufactory for flannel is now established in Hereford, and it seems at present to promise that success which the proprietors so well deserve, and that em-

ployment, of which the industrious poor are in so much want.

The present state of population in the county has already been given ; the total number of inhabitants is 89,191, according to the official returns under the act of 1802. In the year 1754, the city of Hereford contained 5,232 inhabitants, on a survey made by Mr. Taylor, the author of a large map of the county : in 1802 it included 6,828 inhabitants, being nearly an increase of one-fourth in fifty years. Taking the county in the aggregate, the increase has been about one-fifth, within the same period.

CHAPTER XVI.

OBSTACLES TO IMPROVEMENT,

INCLUDING GENERAL OBSERVATIONS ON AGRICULTURAL LEGISLATION AND POLICE.

SHORT leases, for the reasons already assigned, must ever operate as an obstacle to improvement.

Tithes, under the present system, are also considered to be in the same predicament: a want of capital sufficient to stock and conduct a farm, so as to render it most productive, was formerly an obstacle of some importance.

Of late years, perhaps, the facility of acquiring it to a great extent, may have had an injurious effect in a different way. The public good seems best promoted by a middle course: a too great facility is unfavourable to exertion in every instance where the smallest disposition towards indolence has previously existed; and it certainly has been attended with this consequence in some counties, and therefore may in others. A too great and extensive facility may also tend to increase the prices of grain, by enabling *all* (instead of *some*, as the public interest requires), to withhold it from the market, until the prices are equal to their wishes.

In whatever proportion these effects are produced beyond a fair and liberal degree; in that proportion the public are sufferers, and the facility of borrowing money on stock, &c. is so far injurious.

Other arguments and other cases will prove it beneficial in a variety of instances, when carried only to a proper extent.

The earth is productive of food for human subsistence in proportion to the quantity of labour employed in its culture, and the skill with which that labour is applied. Without culture, the most exuberant and the most barren soil differ only in the quantity of weeds which they produce. Whatever, therefore, promotes and facilitates labour, has a tendency to increase the produce of a country.

Paper-currency has this effect. By means of the country bank, the industrious farmer, who has the skill and disposition without the means to employ a proper capital in the culture of his farm, is enabled to supply the deficiency, and thus to add to the produce of his farm. If he employ the capital thus borrowed in annual circulation, so as only to pay himself five per cent. he brings to market an increased produce equal to the principle and interest of the sum borrowed, and thus benefits the country without injury to himself.

The objection, that the paper-currency, by filling the market with money or its representative, has a tendency to decrease the relative value of specie, and thus of necessity to raise the moneyed price of provisions, is certainly true, but not to such an extent, as to have made it in any considerable degree the cause of scarcity or exorbitant rates. Another objection, which has frequently been advanced, is, that the farmer has been enabled by means of the country banks to withhold their corn from the market, and thus to produce an artificial scarcity; and that the price of corn has been enormously raised immediately after harvest, when the barns were well filled. The experience of the present period will probably tend to confirm this objection in the minds of

many. But it is not merely owing to any management of the farmer, that the price of wheat and other grain has been double in the month of November 1804 to the price it bore in the preceding month. Several causes have operated to this end, and it is conceived, that they will not be found permanent. The sowing season has always an effect of this kind. The produce of the year 1804 was certainly much below that of an average crop, but it is trusted the great surplus of the last will be found equal, with the aid of importation, to supply the deficiency. The price of wheat in Herefordshire was indisputably lower (being sold at the rate of sevenpence per gallon) in October, than the farmer, under the weight of increased rent, tithes, and taxes, could raise it for. This proves that no combination could then exist amongst the farmers; and, if ten shillings be, as it is presumed, the fair price of a bushel of wheat in Herefordshire, (i. e. one shilling per gallon,) the fluctuation *above* the fair price since the last harvest will not be found to have much exceeded the fluctuation *below* it. Under the latter circumstance, the monied interest were induced to lay out a large capital in the purchase of corn, and this occasioned a demand, which tended to advance the price; but, at the present rates, they probably will not wait for the chance of higher profits, and their hoards will be gradually brought into consumption with good effect. Lastly, the almost incredible demands of government must in all probability be nearly satisfied for the present; and as a considerable importation has already taken place, and the ports will remain open during some time to come, it is hoped, that these future wants may be supplied without a material effect on the current prices, particularly as the produce of grain in most parts of the continent, during the last year, have been found very abundant.

Of other obstacles, which in different ways impede improvement in agriculture, the law, which limits the number of horses on public roads, may be estimated as one: the toll should also be proportioned to the weight carried, instead of the number of horses drawing it.— This would operate further in favour of the roads.

The employment of attornies as agents for landed property is unfavourable to agriculture, from their want of skill in its management and cultivation; perhaps sometimes from the want of other qualities. An aversion to depart from the old rules of husbandry, will obviously operate directly against all improvement: and a want of due encouragement from landlords in furnishing materials for necessary repairs, or in requiring an exorbitant price for his land, must also be attended with injurious effects to the parties immediately concerned, and to the public at large. But to these objections it may fairly be opposed, that the former has very rarely occurred in Herefordshire, and that low rents never stimulate that industry which tends to the public good.

The regulation of labourers' wages by the legislature is a delicate and a difficult measure, but it is the opinion of the writer of this Survey, that something of the kind ought to be attempted in their favour. The particular provisions of such an act would be best framed by the united wisdom, experience, and humanity of Parliament; but it is humbly suggested, that, if the price of labour could be made to rise and fall with the rise and fall of wheat, a benefit would be conferred on a very large, and generally speaking, a distressed class of the community.

Illiberal persons might create some difficulties by refusing to employ labourers, when the prices were high; but for this the wisdom of Parliament would probably provide a remedy, if a conviction of the justice

of the measure did not gradually remove the evil. An old statute of 13 Richard II. might perhaps form the ground-work at least of a new regulation. The statute alluded to, is in these words; "for as much as a man cannot put the price of corn and other victuals in certain, it is accorded and assented, that the justices of the peace in every county, in two of their sessions to be holden betwixt the feast of Easter and St. Michael, shall make proclamation by their discretion, according to the dearth of victuals, how much every mason, carpenter, tiler, and other craftsmen, workman and other labourers by the day, as well in harvest as at other times of the year, after their degree, shall take by the day, with meat and drink, or without meat and drink, &c. &c."

A general standard for regulating the allowance and relief granted under the poor laws is also deemed a proper subject of legislative interference. In general, the inhabitants of a parish are most competent to decide on the real wants of their poor neighbours, but unfortunately little piques and partialities often operate to the prejudice of one individual and in favour of another.

These would be removed by a general law, which, under the present rates of labour, might provide, that when wheat exceeded one shilling per gallon, the labourer should receive from the overseer a certain stipulated aid for every child beyond the number of three; and it would be more congenial to the feelings of the writer of this, if the labourer might become entitled to this relief as his right, rather than be obliged to sue for it as a boon.

CHAPTER XVII.

MISCELLANEOUS OBSERVATIONS.

SECTION I.—AGRICULTURAL SOCIETIES.

AN Agricultural Society was established in Herefordshire in the year 1797, and it comprises most of the principal proprietors, and many of the principal occupiers of land, throughout the county: the number of members at present exceeds one hundred and twenty.

The prejudices, to which societies of this kind were subjected in their infancy, are now generally superseded by more favourable opinions; and few persons will now deny, that the general system of husbandry is capable of improvement, and that a greater disposition and capability to fatten exist in some breeds of cattle, sheep, and swine, than are found in others, although supplied with equal quantities of food, and in other respects possessed of equal advantages of every kind.

The dairy-man has long known, that cows of one form and make, produce more milk than cows of a different character: and the butcher is equally aware, that bony and ill-formed beasts may acquire almost a redundancy of coarse meat on their shoulders and inferior parts, whilst the valuable joints of the hinder quarters are comparatively bare. But the improved animal will in all cases acquire a greater weight of the best meat, than the ill-formed animal will acquire of the worst meat, from

equal quantities of the same food. And the Herefordshire Society allow no animal to be exhibited for their premiums (except the hog) without the strongest attestations, that it has not been fed with corn, during the six months previous to the exhibition.

On these principles, it is one of the leading objects of the Agricultural Society of Herefordshire to select and encourage that breed of animals, which possess smallness of bone to a certain extent, and a disposition to fatten on the least quantity of food.

This principle is surely reasonable and even obvious; no one would choose a cart-horse for improving the speed of his hackney, nor expect an addition of bone and strength from the cross of a racer.

If it be objected, that some animals exhibited by this and other Societies are fattened beyond every useful purpose, it should be recollected, that such are rather intended as instances of the extent, to which the fattening of particular breeds may be carried, than as patterns of the precise degree of fatness which may be generally desirable.

The avowed objects of this Society are further, to excite by premiums and other means a general spirit of emulation amongst breeders and practical farmers: to encourage and reward industry and fidelity in servants; to promote the knowledge of every branch of agriculture; to encourage the improvement of uncultivated lands; to ascertain the best course of crops on different soils; to promote improvement in the various implements of husbandry; to carry the breeds of cattle and sheep, as to fleece and carcase, to the greatest points of perfection; to improve the breeds of horses of the cart kind; to establish a market and sale, where opulent and spirited purchasers may always find the best stock, which the county can produce; to ascertain and make

public the best means of raising and protecting orchards, of propagating the best fruits, and the most easy, certain, and efficacious manner of proceeding in the several stages of manufacturing their produce into cider and perry; in short, to recommend and bring into practice all the means of facilitating labour, of exciting and rewarding industry, and of raising at the least expense the greatest quantity, and the most approved quality, of animal and vegetable food.

It will readily be admitted, that these objects are highly laudable, and it is equally satisfactory to observe, that, under the auspices of this Society, ancient prejudices are gradually yielding to better practices, and that considerable progress has already been made in many of the improvements, to which the attention of the public has thus been directed.

SECTION II.—WEIGHTS AND MEASURES.

Various weights and measures throughout the same county certainly tend to embarrassment and confusion. One weight and one measure were decreed by Magna Charta and other subsequent statutes to prevail through the realm, excepting the county of Lancaster, where wool was allowed to be sold by larger weights.

The following are the peculiar weights and measures now in use in this county :

A pound of fresh butter, Eighteen ounces.

A stone - - - - Twelve pounds.

A customary acre, - Two thirds of a statute acre.

A hop acre, - - - That space of ground, which contains 1000 plants; viz. about half a statute acre.

- A lugg, - - - - Forty-nine square yards of coppice wood.
- A wood acre, - - Three-eighths larger than a statute, i. e. as 8 are to 5.
- A day's math, - - About a statute acre of meadow or grass land, being the quantity usually mown by one man in one day.
- A perch of fencing, - Seven yards.
- A perch of walling, - Sixteen feet and an half.
- A perch of land, - - Five yards and an half (as statute).
- A bushel of grain - Ten gallons.
- A bushel of malt, - Eight gallons and an half,

CONCLUSION.

MEANS OF IMPROVEMENT, AND MEASURES CALCULATED FOR THAT PURPOSE.

MANY alterations in the generally received practice of husbandry in Herefordshire, have been suggested in the course of this Survey ; these may now be recapitulated : and others, which, it is presumed, would conduce to improvements, shall be noticed with them in a summary way.

Turnips should be cultivated on a much larger scale ; the ground should be cleaned by repeated ploughings, and the whole dung of the farm-yard may be devoted to them with success ; and in every instance the crop should not be less than twice hoed by experienced hands. *

The aid of artificial grasses, and particularly lucerne, as recommended in Chapter VIII, should be generally resorted to.

More attention should be paid in collecting composts of different kinds.

The *brush*-crop of wheat should be totally discontinued, and superseded by a less exhausting crop.

Such surfaces as will admit of it should be faced and burnt, in the manner detailed in Chapter XII.

* The culture of drilled turnips, according to the system adopted on both sides of the Tweed, is particularly recommended to the attention of the spirited farmers in Herefordshire.

Oxen should be more generally worked singly in harness, than under the old, heavy, and awkward yoke.

Ploughing by horses should be performed with less strength than is usually allotted.

The use of new implements, which have been tried with success in other counties, should be more generally adopted in this.

Tithes should be commuted by a fair equivalent.

More care should be taken in cleaning and draining lands designed to be laid down in grass, and in the selection of seeds for that purpose.

Drilling should have a fair trial, particularly on the soils; and the experiment of dibbling or setting should be made on the clays.

Land should be watered or irrigated in every situation which will admit of it. There are various situations in this county, where some thousand acres of pasture and meadow land of inferior quality might be laid under water by every winter flood, if the several proprietors of adjacent estates would unite in the expense of cutting a common course or reservoir, from which each of the parties might be supplied, by troughs or channels of a given size. In some cases, an Act of Parliament on this subject might be necessary to remove difficulties, and would essentially promote the benefit of those concerned.

Lastly, the waste and unimproved lands in the county should be put into such states of cultivation as they will admit of, from the growth of wheat, to a plantation of Scotch firs; and a general bill of enclosure should be submitted to the legislature, ascertaining the rights of all the parties concerned.

APPENDIX.

SECTION I.—OBSERVATIONS ON THE SALE OF CORN BY SAMPLE.

WHEN the law against this practice was enacted and enforced, it was wise and politic, because it was adapted to the then situation of the country.

Population was generally and thinly dispersed, and each district produced a quantity of corn equal to its consumption. The farmer then supplied the inhabitants of his village with corn, and the small remainder was conveyed to the next market town on a horse driven by himself, his son, or an upper servant. If he sold his corn, he rode home again ; and if he failed to sell it, he returned behind his horse as he came.

Each individual then purchased for the use of his family only, and it thus became the interest of the country, that corn should be exposed to sale in small quantities, because it was generally wanted in such quantities.

The state also of many of the roads was unfavourable to the conveyance of large quantities together.

The situation of the country is now widely altered. An increased population is collected by manufacturers into immense masses, and very little corn is grown in those districts, where of necessity, the greatest quantity is consumed. Whatever, therefore, facilitates its conveyance from the country producing it, to the country requiring it, must be beneficial to the public interest.

If the corn-factor, who has to supply the enormous demands of a great manufacturing district, were to be prohibited from purchasing any other corn, but that, which he found exposed in the market of a small and distant town, he would often find the whole quantity offered inadequate, or barely equal to the supply he wanted; in consequence he would be obliged to submit to any price which the seller demanded; whilst, on the other hand, when the factor did not attend the market, or did not want to purchase, the quantity exposed to sale would often greatly exceed the demand. The farmer, in this latter instance, would be necessitated to accept the price which speculators would give; or, after waiting to the close of the market, he would have to convey his corn home again, and to return with it to the next market under the same uncertainty as before. The expense of thus attending the market with his corn would prove a very severe tax on the tillage-farmer, who has already not a few difficulties to encounter; and eventually, he might thus be induced to diminish the quantity, which he had been accustomed to sow.

Another injurious consequence to the public might also ensue; the farmers would be strongly tempted to consult each other, on one market day, on the quantity which should be brought the succeeding market; and the next step might be to settle the price at the same time.

The sale by sample, on the other hand, affords the farmer an opportunity of disposing of his corn with the least expense and under no uncertainty, whilst his team is well employed in labouring at home.

The purchaser has the means of examining a large number of samples; and if the quality produced by one farmer should not suit him, or the price be deemed

exorbitant, he can readily apply to others, and whatever be the quantity wanted, the factor has thus the means of obtaining it. The inhabitants of small market towns apparently suffer some inconvenience from the sale by sample, but perhaps it is much less than generally supposed, for the miller and flour-dealer, where those trades are combined, has the means of supplying tradesmen and the peasantry with flour on lower terms than they can otherwise obtain it. By exhausting the patience of the farmer, when he has exposed his corn in the market, the inhabitant of a market town sometimes gets an advantageous bargain, because the farmer, who has brought his corn from a distance, is unwilling to carry it home. But the loss thus sustained by the grower, would induce him as before to diminish the number of acres usually adapted to the culture of grain; and thus the price of corn would increase from the reduction of the quantity grown.

But, further, the law against sale by sample is incapable of being carried into effect. The contract might be made in the market, and the corn might be produced there, but the farmer and the factor would have settled, or at least understood the quantity and price at a preceding market, and the law would appear to be satisfied, even in the very act of its evasion.

SECTION II.—OBSERVATIONS ON DEALERS IN CORN AND CATTLE.

Like the sale of corn by sample, the dealer in corn and cattle is necessary, where the corn and cattle of one district are to be conveyed to another. The wheat raised in the county of Hereford and Oxford meet in

the Birmingham market : whilst the cattle of Scotland and of Ireland alike contribute to the supply of the London market. The farmers and breeders of those distant districts can hardly be expected to attend personally on every occasion of this kind ; and, if they did, the public must assuredly in some way or another defray the increased expense which would thus be created, and the public would prove the sufferers.

Much clamour however is generally raised against the dealer ; he receives the curses of the populace in the country where he buys corn, for taking it away, and he is similarly treated in the country to which he conveys it, because he does not sell it cheaper. The jobber is equally blamed, because the same animal is made to pass through many hands, before it arrives at the market. But one district, in which dairies abound, has the means of rearing and supporting a large number of pigs during the summer ; another district has a large quantity of corn to thresh, which affords similar means during the winter. By purchasing therefore the pigs in the one district, and selling them in the other, jobbers, or dealers, are equally the friends of both, and of the public ; whilst the competition, as in other trades, tends to limit the profit for their time and trouble.

One farmer also, from the nature and circumstances of his farm and buildings, has the means of raising a great number of pigs with convenience, and with these he supplies others, who have not the same advantages. Crops of clover, vetches, and other green food frequently enable one person to keep a much larger stock of pigs during a part of the summer, than his farm will maintain throughout the year. But, when his food is exhausted, it is surely advantageous to himself and the public, that this stock should be transferred to another, who has the means of providing them with the food

required. Under this management, the animal certainly attains and brings to market a larger weight, than it would generally have done, had it remained entirely in the breeder's hands, and less food is either spoiled or wasted. When the animal ultimately comes to the scale, neither the butcher nor the consumer are interested to know through how many hands it has previously passed; nor does the pig bred by one farmer only sell at a lower price per pound, than that which has been in the droves of twenty jobbers.

SECTION III. OBSERVATIONS ON MILLERS;

It is a subject of frequent complaint amongst the lower classes, that they cannot now, as they formerly did, buy their bushel or half bushel of wheat in the market, and employ the miller to grind it, but that they are compelled to purchase the flour already reduced.—The millers then (and some of them pursue the same line now,) sent his horse round to collect the corn, which he ground, and returned on the following day.

This could not be done by the miller without incurring a considerable expense, which was ultimately repaid by the increased quantity of corn which he detained as toll. If he ground, as he then pretended, every one's bushel or peck of corn by itself, much delay was of necessity occasioned; and this delay again enhanced of necessity the price of grinding. The miller had then as good opportunities of mixing the flour as the dealer has now, and it will probably be found, that, whenever wheat has been comparatively dearer than other kinds of grain, the practice of mixing different sorts of flour, was almost as general formerly,

according to the degree of temptation offered, as it has been in later times. Nor is this mixture to be deprecated in seasons of real scarcity; for when the quantity of wheat is not sufficient to afford the requisite supply, a better substitute is not to be found. We may justly lament the necessity, but we cannot arraign the propriety of the measure. As a dealer in flour, the miller now purchases a load of corn at once from the farmer, and he proceeds in its manufacture without interruption or delay.

This enables him to supply his customers with flour on much lower terms than they could procure it, when the miller sent his horses at a considerable expense to collect the corn in small quantities, and again to return the flour by the same conveyance.

The wives of the peasantry, it is true, frequently carry their pecks of wheat to the mill, and having waited to see it ground, bring back the flour, and thus seem effectually to guard against all imposition or fraud.

But it often happens, that the miller is too much engaged, to grind it at the time when it is brought, and he may sometimes also postpone it with a fraudulent intention. But in every case, and without this expedient, he may impose upon them when present. On these occasions the old ladies will generally be found assembled in a group, attending to, and circulating the scandal of the day, and settling the affairs of the nation below, whilst the miller above stairs, takes away or exchanges a portion of their corn, as readily as Jonas and Breslaw could exchange a card in a pack.

SECTION IV.—RARE PLANTS FOUND IN HEREFORDSHIRE.

Considerable quantities of saffron were formerly produced in this county, and in the gardens situated in the suburbs of Hereford. This did not escape the notice of our provincial poet :

“ Can Tmolus’ head
“ Vie with our saffron odours ? ”

Its culture, however, has long been discontinued here, and principally attended to in the counties of Essex and Cambridge, but the purple crocus (*colchicum autumnale*), which belongs to the sixth class of Linnæus, blossoms in the meadows by the Wye in the month of September. The *crocus sativus*, which produces saffron, belongs to the third class of Linnæus.

Mr. Gough in his edition of Camden, mentions the following as rare plants in Herefordshire.

Bryum rigidum	Rigid Bryum, found near Wigmore.
Conferva rigida	Rough Conferva, in the river Lug.
Lichen furfuraceus	Branny Liver-wort, near Croft Castle.
Lichen sinuatus	Sinuuated Liver-wort, near Wigmore.
Mentha rotundifolia	Round-leaved Horse-mint, at Ross.
Taxus baccata	The Yew-tree, on the mountains.

The following have been observed on the eastern borders of Herefordshire in the vicinity of Malvern Hills, and are deemed *rariores* as natives of Great Britain :

Veronica montana	Stalked Speedwell.
Pinguicula vulgaris	Common Butterwort.
Montia fontana	
Gentiana amarella	Autumnal Gentian.
Menianthes trifoliata	Trefoil Buckbear.
Vinca minor	Lesser Periwinkle.
Campanula patula	Field Bell-flower.
Selinum palustre	Marsh Milk-weed.
Chlora perfoliata	Perforated yellow-wort.
Chrysosplenium alternifolium	Alternate-leaved Sengreen.
Dianthus armeria	Deptford Pink.
Cotyledon umbilicus	Common Navel-wort.
Antirrhinum elatine	Sharp-pointed Snap-dragon.
———— minus	Least Snap-dragon.
Cochlearia Armoracea	Horse Radish.
Geranium phœum	Dusky Geranium.
Lathyrus Nissolia	Crimson Vetchling.
———— sylvestris	Narrow leaved Vetchling.
Hippocrepis comosa	Tufted Horse-shoe.
Carex pendula	Pendulous Seg.
———— muricata	Prickly Seg.
———— capillaris	Capillary Seg.
Asplenium Adiantum nigrum	Black Spleen-wort.
Osmunda Spicant	Rough Moon-wort.
Fortunalis secunda	Water Moss.
Polytrichum Nanum	Hair Moss.
———— subrotundum	Dwarf Moss.
Bryum Pomiforme	Apple-thread Moss.
———— Heteromallum	Thread Moss.

<i>Hypnum Abretinum</i>	Fir-feather Moss.
——— <i>Viticulosum</i>	Twig-feather Moss.
<i>Jungermannia Epiphylla</i>	Broad-leaved Startip.
——— <i>furcata</i>	Broad-shaped Startip.
——— <i>punguis</i>	Jagged Startip.
<i>Lichen Coceineus</i>	Scarlet Lichen.
——— <i>virgatorum</i>	——— Lichen.
——— <i>speroides</i>	Spherical Lichen.
——— <i>parellus</i>	Crab's-eye Lichen.
——— <i>Pezizoides</i>	Peziza Lichen.
——— <i>Scruposus</i>	Hollow Lichen.
——— <i>Tenuissimus</i>	Thin Lichen.
<i>Hydnum repandum</i>	Smooth Hydnum.
<i>Helvella Gelatinosa.</i>	——— Turban-top.
——— <i>Cartilaginea</i>	Gristly Turban-top.
<i>Peziza Punicea</i>	Vermilion Peziza.
——— <i>marginata</i>	Eyelet Peziza.
<i>Trichia fragiformis</i>	Cylindrical Trychia.

The following are met with in the more central part of the county.

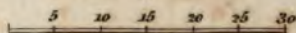
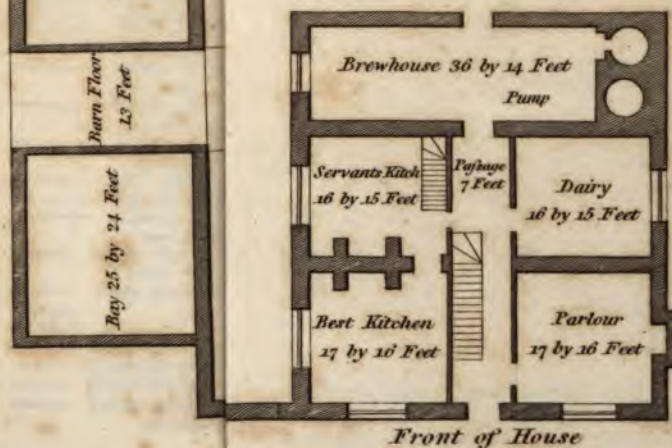
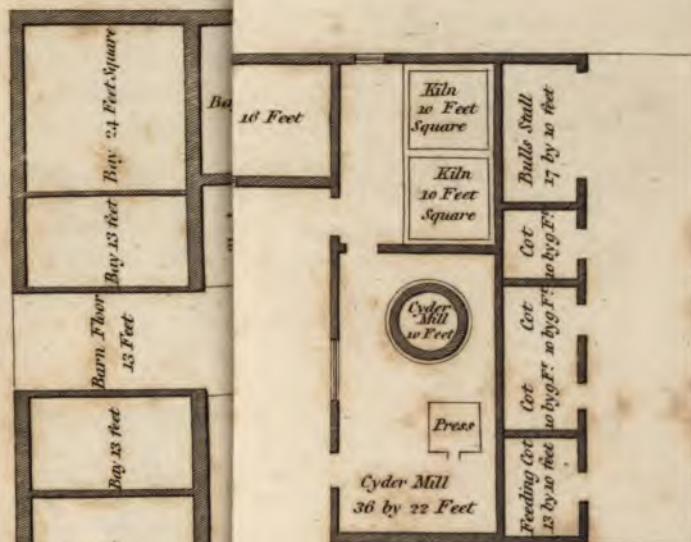
<i>Campanula hederacea</i>	Ivy-leaved Bell-flower.
<i>Carduus eriphorus</i>	Wooly-headed Thistle.
<i>Cratægus terminalis, vel</i>	
<i>sorbus</i>	Wild Service tree.
<i>Daphne laureola</i>	Spurge Laurel.
<i>Lathyrus Sylvestris</i>	Narrow-leaved Everlasting-pea or Vetchling.
<i>Ophrys apifera</i>	Bee Orchis.
——— <i>muscifera</i>	Fly Orchis.
<i>Œnanthe crocata</i>	Hemlock Water-dropwort.
<i>Phellandrium aquaticum</i>	Common Water-hemlock.
<i>Pimpinella Dioica</i>	Stone Parsley.
<i>Pinguicula vulgaris</i>	Common Butter-wort.
<i>Polypodium thelypteris</i>	Marsh Fern.
<i>Scabiosa columbaria</i>	The lesser Field-scabious.

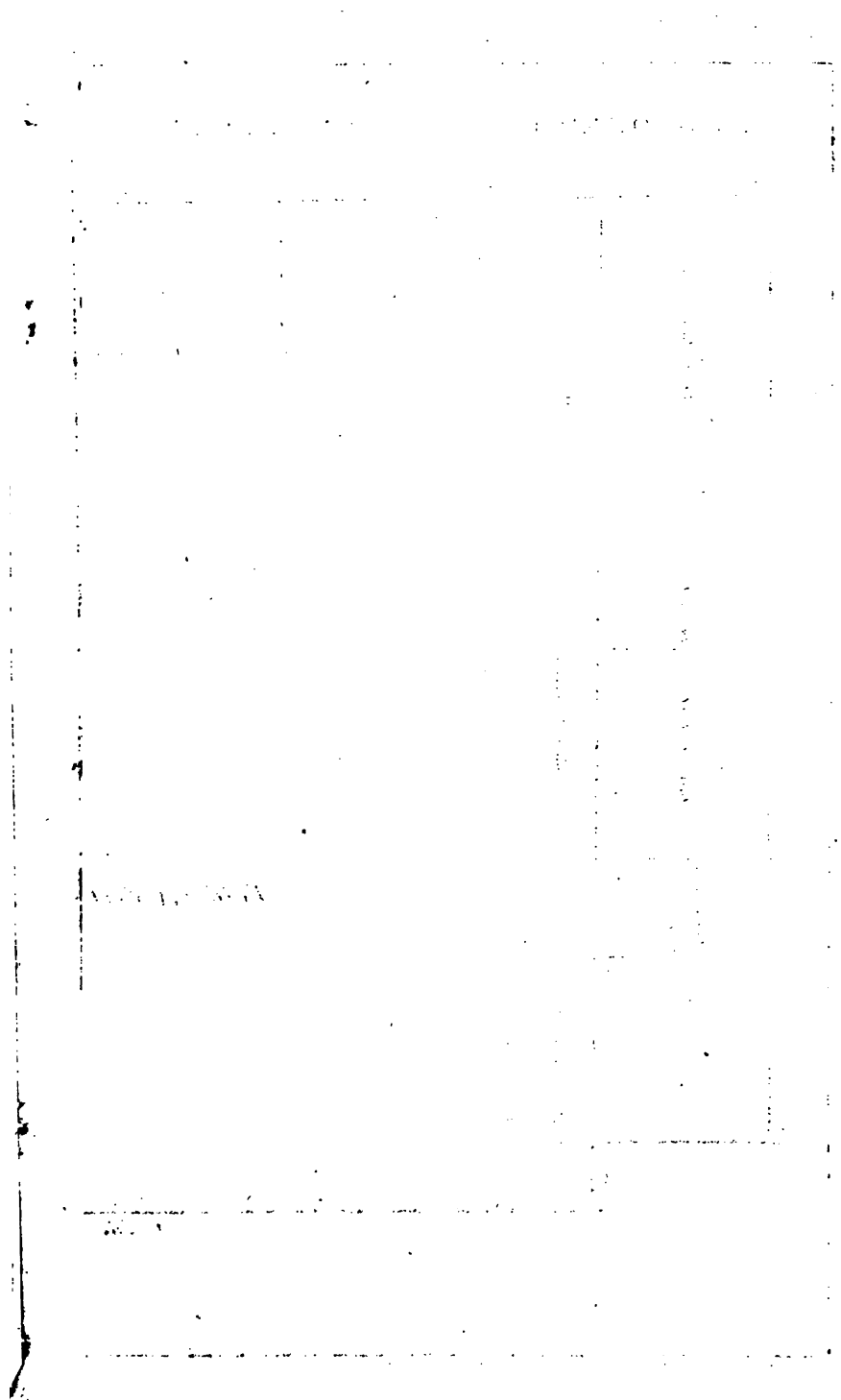
The northern parts of the county produce the following:

<i>Orchis bifolia</i>	Butterfly Orchis.
——— <i>conopsia</i>	Red-handed ditto.
——— <i>ustulata</i>	Dwarf ditto.
<i>Serapias latifolia</i>	Common Helleborine.
——— <i>palustris</i>	Marsh ditto.
<i>Comarum palustre</i>	Marsh Cinquefoil.
<i>Menyanthus trifoliata</i>	Buck Bean.
<i>Lycopodium clavatum</i>	Club Moss.
<i>Lythrum salicaria</i>	Purple-spiked Loose-strife.
<i>Scabiosa columbaria</i>	Small Scabious.
<i>Campanula patula</i>	Field Bell-flower.
——— <i>trachelium</i>	Nettle-leaved ditto.
<i>Alisma natans</i>	Creeping Water-plantain.
<i>Antirrhinum majus</i>	Greater Snap-dragon.
<i>Cheledonium majus</i>	Common Celandine.
<i>Inula helenium</i>	Common Elecampane.
<i>Cotyledon umbilicum</i>	Navel Wort.
<i>Parietaria officinalis</i>	Pellitory of the wall.
<i>Geranium Lucidum</i>	Shining Crane's-bill.
——— <i>Columbinum</i>	Long-stalked ditto.
——— <i>Sanguineum</i>	Bloody ditto.
<i>Dianthus deltoides</i>	Maiden Pink.
——— <i>caryophyllus</i>	Clove ditto.
<i>Cynoglossum officinale</i>	Officinal Hound's-tongue.
<i>Empetrum nigrum</i>	Black Crow-berry.
<i>Vacinium vitis Idea</i>	Red Whortle-berry.
<i>Ophoglossum vulgatum</i>	Adder's Tongue.
<i>Potentilla verna</i>	Spring Cinquefoil.
<i>Verbascum Virgatum</i>	Rod-like Mullein.
——— <i>blattaria</i>	Moth ditto.
——— <i>thapsus</i>	Great white ditto.
<i>Osmunda Lunata</i>	Common Moon-wort.
——— <i>spicant</i>	Rough ditto.
<i>Sisymbrium tenuifolium</i>	Wall Rocket.

Eugon acre	Blue Flea-bane.
Lithospermum officinale	Common Gromwell
———— pupureo-	
coeruleum	Creeping ditto.
———— arvense	Corn ditto.
Hypericum androsaemum	Tutsan St. John's-wort.
———— quadrangulare	Quadrangular ditto.
———— dubrum	
Saxifraga trydactylites	Three-leaved Saxifrage.
———— trypnoides	Moss ditto.
Chlora perfoliata	Perforated Yellow-wort.
Galeopsis versicolor	All-heal.
———— tetrahit	Nettle Hemp.
Galeobdon luteum	Yellow All-heal.
Pinguicula vulgaris	Common Butter-wort.
Sedum reflexum	Yellow Stone-crop.
———— reptans	Rock ditto.
———— telephium	Orpine stone ditto.
Scrophularia nodosa	Knotted Fig-wort.
Lysimachia nummularia	Money-wort Loose-strife.
———— nemorum	Pempernel ditto.
Arenaria rubra	Purple Sand-wort.

The GROUND The COUNTY of HEREFORD.





A CATALOGUE OF AGRICULTURAL SEEDS, &c.

SOLD BY

THOMAS GIBBS AND Co.

Seedsman and Nurserymen to the Board of Agriculture,

Corner of Half-Moon-Street, Piccadilly, London :

*Who also Sell every Article in the Nursery and Seed Line ;
and with whom Bailiffs, wanting Places, leave their Ad-
dress, and particulars of Situations in which they have
previously been.*

N. B. The fluctuation of the London Markets prevents fixing
a Price to the different Articles.

Barley. Isle of Thanet.
 _____ Norfolk.
 _____ Naked
 _____ Winter.
 Beans. Small Essex.
 _____ Tick.
 _____ Mazagan.
 Broom. Common yellow,
 Buck, or French wheat.
 Burnet.
 Cabbage. Gibb's true drum-
 _____ head, for cattle.
 _____ Scotch.
 _____ American.
 _____ Large red.
 _____ Long-sided.
 _____ White turnip above
 _____ ground
 _____ Purple ditto ditto, or
 _____ kohlrabi.
 _____ White turnip under
 _____ ground.
 _____ Tall green borecole.
 _____ Tall purple ditto
 _____ Siberian harly
 _____ sprouting.
 Carrot. Large thick orange, for
 _____ cattle
 _____ Large thick red, ditto.
 Canary.
 Chicory.
 Clover. Common red.
 _____ Perennial, or cow-grass.
 _____ White Dutch.
 _____ Yellow, trefoil, nonsuch,
 _____ or black grass.

Clover Malta.
 _____ Providential.
 Flax, or linseed.
 Furze.
 Grass. Meadow foxtail.
 _____ Meadow fescue.
 _____ Sheep's fescue.
 _____ Hardish fescue.
 _____ Purple ditto.
 _____ Float ditto.
 _____ Crested dogtail.
 _____ Rough cocksfoot.
 _____ Tall oat grass.
 _____ Yellow ditto.
 _____ Meadow ditto.
 _____ Sweet vernal.
 _____ Great meadow.
 _____ Common ditto.
 _____ Marsh ditto.
 _____ Compressed ditto.
 _____ Annual ditto.
 Grass. Common ray grass.
 _____ Peacey ditto.
 _____ Improved perennial do.
 _____ Timothy.
 _____ Yorkshire.
 _____ With many other sorts.
 Hemp. Russian.
 _____ English.
 Honeysuckle. French.
 Lettuce. Large Coss.
 Lentils. Small.
 _____ Large.

Lucerne.

Mangel wurzel.

Maw-seed.

Medicago, various sorts.

Millet. Red.

— White.

Mustard. Brown.

Oats. Early Essex.

— Dutch brew.

— Tartarian.

— Poland.

— Potatoc.

— Flanders.

— Caspian.

— Black.

Parsley. Plain.

Parsnip. Large thick.

Pea. Gibbs' best early.

— Marlborough grey.

— Large grey rouncival.

— Early white.

— White boiling.

— Pearl.

— Blue Prussian.

— Maple.

Potatoes. Ox-noble.

— Late champion.

— Large red.

— Nicholson seedling.

— Bomb-shell.

Rib grass. Lamb's-tongue, or

— Upright plantain.

Rape, or coleseed.

Rye,

Sainfoin.

Saridella.

Tares. Spring.

— Winter.

— White.

— Perennial.

Trefoil. Birdsfoot.

— Common, various sorts.

Turnip. Early stone.

— White Norfolk.

— Norfolk bell.

— Stubble.

— Green top.

Turnip. Red top.

— Large yellow.

— Globe.

— White tankard.

— Green ditto.

— Red-top ditto.

— Large Dutch.

— True yellow Swedish,

— or ruta бага.

— White Swedish.

Vetch. Kidney.

— Chickling.

— Pale-flowered.

— Everlasting.

— Great wood.

— Six-flowered.

— Tufted.

— Bush.

— Hoary.

— Sainfoin.

— Red-flowered.

— Biennial.

— Bastard.

— Broad-podded.

— Rough.

— Single-flowered.

— Narbonne.

— Flat podded.

— Hairy ditto.

— Narrow-leaved.

— Streaked.

— White-flowered.

— White-seeded.

— Horse-shoe.

— Milk.

— Liquorice.

Weld.

Wheat. Red Lammas.

— Common white.

— White hedge.

— White Siberian.

— Egyptian.

— Sicilian.

— Round African.

— Zealand.

— Cape.

— Dantzick.

Woad.

Yarrow.

